

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT  
PROGRAM PLANNING MANUAL FOR  
RECIPIENTS OF  
FINANCIAL ASSISTANCE

JUNE 1986

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## PREFACE

The purpose of the manual is to provide recipients of Financial Assistance with basic information about the Office of Civilian Radioactive Waste Management (OCRWM), its organization, goals, and policies as they relate to financial assistance.

It will help recipients understand their responsibilities in meeting reporting requirements, requesting Financial Assistance and how to avoid potential problems. It also permits two-way communication between recipients and the Department of Energy (DOE) Field offices responsible for administering the OCRWM Financial Assistance Program (FAP). It will simplify a task looked upon by many as "complex".

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PART I  
INTRODUCTION

1.1. Purpose

The Recipients Manual (RM) contains information to help recipients prepare for and participate in the award and administration of Financial Assistance authorized by the Nuclear Waste Policy Act of 1982.

A decision of the eligibility requirements to receive Financial Assistance under the NWA and the allowable activities are contained in this document-is intended to assist the recipients understanding and meeting the administrative requirements. The RM does not modify or replace any of the requirements enunciated in DOE regulations or OCRWM Financial Assistance Guidelines.

The RM is part of a continuing process of information-sharing on the management and operation of the OCRWM and its Financial Assistance Program. OCRWM will update the RM as experiences indicate the need to do so. Thus, the RM will increasingly become a manual of and by--and not merely for--those involved in the OCRWM Financial Assistance Program (FAP).

The RM has been developed to serve two specific requirements:

- o The Recipient's Application and Plan: The RM is organized to follow a logical sequence. Emphasis is placed on (1) meeting the recipients annual application and recipient plan requirements, and (2) carrying out an effective planning process.
- o Reference Guide to OCRWM FAP: The RM can be used as a reference guide to OCRWM policies, procedures, and requirements, by recipient program managers and staff.

1.2 What Subjects Does the RM Address?

The RM is divided into four parts that relate to functional areas of which recipients should be aware before they prepare their annual application for financial assistance. The chapters include:

## Part I - Introduction

- o How to Use the Recipients Manual: Section I describes the purposes of the RM and how it is organized.
- o The-OCRWM Financial Assistance Program: Section II summarizes OCRWM Financial Assistance Program objectives, and key program features.

## Part II - Applying for Financial Assistance

- o The Application for Financial Assistance: Section I describes the contents and submission of the annual recipient application for financial assistance.
- o Eligible Recipients: Section 2
- o Start up Considerations: Section 3 discusses critical considerations in starting a FAP.
- o Recipients Financial Assistance and Associated Requirements. Section 4 describes funding requirements, prohibited expenditures, and special projects funding.
- o Budget Revision Procedures: Section 5
- o The Recipient Plan: Section 6 describes how to prepare the recipient plan -- a key element of the annual recipient application.

## Part III - Operational Requirements

- o Overview - Section 1 discusses general operational requirements.
- o Recipient Program Reporting: Section 2 describes the performance and financial reports which the recipients will submit to DOE on a quarterly basis.
- o How to: Section 3 describes how to request funds, complete reports and avoid problems.
- o Closeout Requirements: Section 4 describes closeout requirements.
- o Audit of Awards: Section 5 describes audit requirements.

## Part IV - DOE's Functions and Responsibilities

This section outlines DOE's functions, including technical assistance, evaluation, monitoring, and communication of barriers to recipient organizations.

### 1.3 The Indexing System

The RM is organized by single digit chapter headings and by 2- and 3- digit subsections. A subject index is provided in Appendix G. This format has been designed to facilitate the use of the manual as a reference source and allow for easy updating. If changes are required or new features added, OCRWM will send the relevant subsections to the Recipients.

As the RM is intended to be a working document, DOE is interested in hearing from the recipients about items which they believe should be included or further clarified in the manual. Comments should be directed to the appropriate DOE Operations Office.

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## PART II

### APPLYING FOR FINANCIAL ASSISTANCE WITH THE OCRWM

#### 2.1 The Annual Recipient Application (To be supplied)

#### 2.2 Eligible Recipients

As indicated in the OCRWM Grants Guidelines, the Nuclear Waste Policy Act of 1982 authorizes OCRWM to make three types of grants to States, Indian Tribes, and local governments. These grants are participation grants, mitigation grants, and grants equal to taxes. Recipients should look to the OCRWM Guidelines for further detail on the eligibility structure of NWPA grants.

#### 2.3 Start-Up Considerations

This chapter discusses critical considerations for recipients to consider in starting up a Financial Assistance Program. Previous program experience indicates that how recipients deal with these elements during preparation of the recipient plan can influence the dates when program implementation actually begins, the timely achievement of management and administrative milestones, and commitments made to and by participating organizations.

The critical start-up considerations are:

- o Have all recipient legislative approvals (were applicable) been obtained to receive OCRWM grant funds?
- o Have the necessary procedures, schedules, and agreements for contracting and procurement been worked out?
- o Have the necessary procedures and schedules been developed and approved for personnel recruitment and staffing?
- o Have reporting and management control systems been established?
- o Have coordination systems been established between participating organizations?

#### 2.4 Funding Requirements

Recipients should look to the OCRWM Guidelines for the following information:

- o Eligible Recipients and Program Activities
- o Allowable and Unallowable Costs
- o Discontinuation of Funding

#### 2.5 Budget Revision Procedures

Under the OCRWM Financial Assistance Program, the recipients may find it necessary to report a project/budget revision or request prior approval of a budget item, if so, the following provides criteria and procedures to be followed to report these deviations and to request approvals:

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- (1) the revision results from changes in the scope of the grant-supported program;
- (2) the revision indicates the need for additional Federal funds which may be available;

Specific conditions for budget revision procedures are contained in 10CFR600.114.

- (3) equipment, materials and supplies not previously approved with an individual cost of over \$500; and
- (4) the cumulative amount of transfers within a budget period among direct cost budget categories exceeds or is expected to exceed \$10,000, or five percent of the grant budget, whichever is greater.

When requesting approval for budget revisions, recipients shall use the budget forms found in the grant application. However, recipients may request, by letter, the approvals required, as provided for in OMB Circular, A-87.

Within 30 working days from the date of receipt of the request for budget revisions(s), the DOE Operations Office shall review the request and notify the recipient whether or not the budget revision(s) have been approved. If the revision(s) are still under consideration at the end of the 30 days, the Program Manager shall inform the recipient in writing as to when the recipient may expect a decision.

## 2.6 Preparing the Recipient Plan

The purpose of the recipient plan is to provide an integrated and comprehensive picture of how the recipient intends to operate its FAP and why the selected approach makes sense in terms of the unique characteristics and circumstances of the recipient.

DOE expects the grantee to use the recipient plan as its base document to manage and coordinate the FAP implementation. DOE also expects that all organizations of the recipient with a role in carrying out the recipient plan will use it to understand and agree on their precise responsibilities and relationships in the FAP implementation.

DOE intends the recipients plan to be dynamic part of a continuing planning process. DOE expects that recipients will adjust their plans, subject to DOE review and approval, as experience highlights unforeseen opportunities, problems and issues.

Planning and preparing to implement the recipient FAP is a major management task: scheduling, coordinating, and acting on the activities of many different people and organizations. One set of events must culminate in the submission of the recipient Application and Plan; and another set of events must be completed to insure timely, scheduled program implementation. Prior experiences have indicated that when delays occurred, more often than not the reason was that some requirements and procedures were unrealistically scheduled and coordinated.

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One of the purposes of the RM, of course, is to identify and discuss all the elements, requirements, and procedures for planning and preparing to implement the FAP. But it might be useful to present an overview of what is involved in this management task.

- o Who will be involved in drafting the recipient plan?
- o What overall approach will the recipients take in developing the objectives and recipients organizational and programmatic strategy for achieving those objectives? How will the concept of cost-effectiveness be taken into account?
- o Is the approach consistent with OCRWM Financial Assistance Policies and Procedures?
- o Is State legislature (or some other entity) approval required to receive Federal grants? If so, what is the schedule for obtaining that approval?
- o Have assignments and target completion dates been established for the recipient application?
- o Have the procedures and schedule for review and approval of the recipient application been established?
- o Have all recipient contracting and procurement requirements and procedures been spelled out in relation to the FAP program?
- o Have schedules been developed for negotiating all contracts and agreements?
- o Have the specific content requirements of each type of contract and agreement been spelled out?
- o Do all participating organizations understand and accept the procedures and requirements with respect to record-keeping, reporting, purchasing, budget limitations, authorized expenditures, travel, and coordination?
- o Have all the applicable personnel recruitment and staffing requirements and procedures been spelled out in relation to the FAP program?
- o Have schedules been developed with respect to personnel recruiting which will help insure that staff is hired on schedule?
- o Have staff training needs been assessed?
- o Have responsive training opportunities been designed and scheduled?
- o Have reporting and management control systems been designed?
- o Has particular attention been paid to how records will be kept to supply data for national evaluation?

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## RM PART III

### OPERATIONAL REQUIREMENTS

#### 3.1 Overview

Following grant award, recipients will report on program progress to the appropriate DOE Operations Office within 30 days after the end of each calendar quarter. A recipient should send the original and two copies of the Quarterly Report to its Operations Office FAP contact, unless directed otherwise by the Operations Office.

The purpose of Quarterly Reporting is to provide DOE with information necessary to track program progress against plans established in the recipient's annual application.

Appendix B contains copies of the quarterly report forms and instructions, a glossary of terms used in the forms, and completed copies of the forms as examples. (To be supplied).

#### 3.2 Reporting Requirements

##### 3.2.1 Management Summary Reports (MSR)

A separate MSR will be completed for each program/function. Information in this section will consist of planned milestones and budget for the year (as submitted with the annual application) and actual performance on milestones and budget through the current quarter. This will allow a comparison of planned and actual performance for each program or function.

##### 3.2.2 Financial Status Report (FSR)

The Financial Status Reports (SF-269) will show costs on an accrual basis. A breakdown by project and function is required. FSR's are required to be submitted on a quarterly basis.

##### 3.2.3 Cash Management Reports (CMR)

A Federal Cash Transaction Report (SF-272) should be sent to the Cognizant DOE field office's on a monthly basis.

##### 3.2.4 Funds Request Reports (SF-270)

A request for Funds or Reimbursement report is required when a recipient does not qualify for payment by letter of credit.

#### 3.3 How to Request Funds, Complete Reports, Avoid Problems

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### 3.3.1 Purpose

This chapter has been designed to guide you through the various Department of Energy (DOE) forms needed as part of the Grants and Financial Assistance Program (FAP). When the time comes for you to complete a report or request funds, please turn to the detailed "HOW TO" instructions. The most frequently asked questions have been answered and the most common errors addressed.

#### o Reports Are Mandatory

Monies MAY NOT be paid out under this program unless reports are submitted as required in the conditions of the grant.

DOE ALWAYS needs original ink signatures on its copies of reports and funds requests. Avoid delays by following this simple rule.

All reports should be rounded to the nearest whole dollar.

#### o IMPORTANT POINTS TO REMEMBER:

OCRWM grants are funded in an amount not to exceed the amount awarded as indicated on the face page, and is subject to a refund to DOE of unexpended federal funds. There is no commitment for additional DOE funding beyond the amount awarded in this grant.

The OCRWM or PO may make site visits as frequently as practicable to review progress under this grant.

Grant recipients must follow the audit requirements set forth in DOE 10CFR600 DOE Financial Assistance Rule subpart D.

When property acquired under an OCRWM grant is no longer needed, the grantee should request disposition instructions from DOE.

### 3.3.2 Highlights of Requirements Related to Common Problems

#### o Procurement (10CFR600.119).

- A. All contract actions regardless of dollar value shall be conducted in a manner so as to provide maximum competition.
- B. Agreements/contracts must be written, not oral.
- C. Cost-plus-a-percentage-of-cost type contracts are prohibited.
- D. Mandatory clauses must be included in contracts (see Attachment of OMB Circular A-102.

- E. Price or cost analysis must be performed on every procurement action.
  - F. The award shall be made to the lowest responsive, responsible bidder in procurement actions utilizing the competitive sealed bid process.
  - G. The procurement solicitation cannot restrict competition by giving preference to local potential bidders (i.e., within the state).
- o Budget
    - A. Costs must be incurred and work must be performed within the grant budget period. An extension to the approved budget period requires DOE approval and should be requested at least 30 days before the end of the budget period. The request should be sent directly to DOE Project Office at the address shown on the front of this booklet.
    - B. Deviations from approved projects require DOE approval. Send the original request for approval directly to DOE.
- o Financial Systems/Records (Reference 10CFR600.116.).
    - A. Records must be kept which identify the receipt and the disbursement of funds.
    - B. Grantees must keep records of costs by individual project and summarize by object class.
    - C. All non-federal and federal costs must be supported by source documentation.
    - D. All in-house labor must be supported by accurate wage, hour, and duty records.
    - E. Grantees must have effective control and accountability over all funds.

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### 3.3.3 Outline of Reporting Requirements

Reports	Due	Period Covered	Sent To
Cash Request Reports Request for Advance (SF-270) Used for Advance or Reimbursements	Within 30 days of actual cash expenditures	Cumulative from data of GFA Award	Original to DOE
Request for Funds Report (SF-5805A) Used for Letters of Credit	When needed	Billing period	Recipient's bank and to PO
Quarterly Reports:			
Financial Status Report (SF-269)	Jan. 31, April 30, Oct. 31, and July 31	Each 3 months ending March 30, June 30, Sept. 30 and Dec. 30	Original & 2 copies
Federal Assistance Management Summary Reports	Jan. 31, April 30, July 31, and Oct. 31	Each 3 months ending Dec. 31, March 31, June 30, and Sept. 30	Original & 2 copies
Final Reports:			
Financial Status Report (SF-269)	Within 90 days after project	Entire Grant	Original & 2 copies

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### 3.3.4 Points to Remember When Completing Reports

#### o Funds Requests (SF-270)

You will not receive any funds unless you submit a Request for Advance or Reimbursement (SF-270) to DOE.

Grantees are expected to use funds within 30 days of receipt. Therefore, DO NOT request an advance more than 45 days before you expect to pay out the money. Your next SF-270 should show the advance has been expended. IF NOT, DOE reserves the right to recall all excess funds and impose a "reimbursement only" requirement on ALL future fund requests. The cumulative total of costs should be shown on each SF-270.

#### o Federal Assistance Management Summary Report

List on the form any approach changes or variances to the approved milestone plan. The report should be sent directly to the cognizant DOE Project Office.

#### o Financial Status Report (FSR) (SF-269)

In each new budget period, the amount shown under "Net Outlays Previously Reported" will be "0".

Report expenditures by object classification.

If you received but did not spend all of the federal funds, include a refund check, payable to the "Department of Energy", with your final FSR.

## PART IV

### DOE Functions and Responsibilities

#### 4.1 Headquarter's Responsibilities

Both Headquarters and Project Offices have responsibility in the management and administration of the FAP. Headquarters develops financial assistance policies and oversees the process to promote consistency and equity throughout the NWPA program; Project Offices administer the individual grants. It is the responsibility of Headquarters to:

- o analyze and develop programmatic financial assistance policies and procedures;
- o respond to requests for grant information from GAO, OMB, Congressional Committees, program management, and others;
- o ensure consistency and equity in administration of the grant program;
- o promote effective interaction among Project Offices;
- o perform programmatic, financial, and legal review of applications;
- o work with Project Offices to resolve grant-related issues;
- o concur on grant applications; and
- o review activities conducted under the grants to ensure program-wide comparability.

#### 4.2 Program Office Responsibilities

The responsibilities of Project Offices are to:

- o notify eligible jurisdictions of availability of NWPA grant programs;
- o assist applicants in preparing applications;
- o receive grant applications;
- o forward copies of applications to Headquarters;
- o perform programmatic, financial, and legal review of applications;
- o identify issues and propose resolution for coordination with Headquarters;
- o forward Project Office comments to applicants and request revised applications;

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- o receive revised grant applications and forward copies to Headquarters;
- o submit grant award documents to Headquarters for concurrence;
- o upon concurrence, award grants and forward copies of accepted award documents to Headquarters;
- o administer grants;
- o maintain grant documentation and administrative records;
- o monitor grantee activities and records to ensure programmatic and financial compliance; and
- o forward copies of monitoring reports and grantee quarterly reports to Headquarters.

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## GLOSSARY OF TERMS

Budget Period. This is usually a 12-month period covered by an approved budget supporting an award. This term is used in connection with funding project grants.

Cash on Hand. This term refers to the amount of Federal cash actually received by the recipient less his Federal expenditures as reported. This balance must not include unpaid amounts for such items as accruals, accounts payable, etc.

Disbursements. This term refers to the actual payment of cash by the recipient for goods or services provided in accordance with an award agreement.

Discrete Award. This type of award covers a project that will be completed within a relatively short period of time, is nonseverable into distinct stages, contains no commitment for future funding and is fully obligated by DOE at the time of the award.

Expenditures. This term refers to the actual cash disbursements if the recipient maintains his accounting records on a cash basis. The term refers to the amount of cash paid or to be paid for an expense incurred, or an asset purchased, if the recipient maintains his accounting records on an accrual basis.

Formula Grants. Allocations of money to States or their subdivisions in accordance with distribution formulas usually prescribed by law, or, occasionally, by administrative regulation, for activities of a continuing nature not necessarily confined to a specific project.

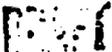
### DOE Awarding Component or Awarding Component Organization.

Principal Operating Field Office Components, and staff offices of the Office of the Secretary that make awards for this Department.

Letter of Credit. This financial instrument is a commitment to a recipient, certified by an authorized official of DOE, specifying a maximum dollar availability during a specified time period through a Treasury Disbursing Office.

### Request for Funds on Letter of Credit (Standard Form 5805)

This is a form prescribed by the Department of Treasury for use by recipient organizations for making withdrawals against letters of credit.

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Project Period Awards. This type of award provides support for a multi-year project funded on a budget period basis, with a commitment to fund the project through the approved project period or indefinitely, subject to availability of appropriated funds and other conditions. Each budget period of support is funded at a level equal to the approved operating budget for the period. Funding will include any unused balance at the end of the prior budget period plus new funds necessary to meet the approved operating budget level.

Example of a Project Period Grant

<u>Budget Period</u>	<u>Total Budget</u>	<u>Current Period Award</u>	<u>Current Budget Period</u>	<u>Cumulative To Date</u>	<u>Current Budget Period</u>	<u>Cumulative To Date</u>
1	\$16,000	\$16,000	\$14,000	\$14,000	\$2,000	\$2,000
2	\$28,000	\$12,000	\$10,000	\$24,000	\$2,000	\$4,000
3	\$42,000	\$14,000	\$13,000	\$27,000	\$1,000	\$5,000
4	\$54,000	\$12,000	\$13,000	\$50,000	\$1,000-	\$4,000
5	<u>\$70,000</u>	<u>\$16,000</u>	<u>\$19,000</u>	<u>\$69,000</u>	<u>\$3,000-</u>	<u>\$1,000</u>
Total	\$70,000	\$70,000	\$69,000	\$69,000	\$1,000	\$1,000**

\*\* The recipient did not use funds in the amount of \$1,000.00 which is the difference between the total awards and the total expended. This amount would be deobligated by the DOE awarding component.

Recipient or Recipient Organization. This term refers to an individual or organization outside the Department receiving Federal cash under grants or other Federal assistance type agreements awards by this Department. Included are State and local governments, educational institutions, international organizations, and other non-profit organizations.

Status of Awards. The following terms describe the status of awards:

Active Awards are those for which the performance period has not expired.

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Expired Awards are those for which the performance period has expired.

Open Awards may be either active or expired for which final action has not been taken to permit closeout.

Closed Awards are those for which the performance period has expired; all disbursements have been made; and the Final Report of Expenditures has been submitted, accepted, and recorded by the DOE awarding component, and in agreement with expenditures reported by the recipient to DOE.

Purged Awards are those that have been closed for one or more years and removed from DOE.

# ENCLOSURE 1

## NNWSI AUDIT PLAN 86-2A - DENVER

Audit No. 86-2a

Date 2/18/86

### 1.0 SCOPE

The purpose of this audit is to evaluate the effectiveness of the (USGS) Denver, CO Quality Assurance Program Plan and its procedures with respect to the requirements of NNWSI NVO-196-17 (Rev. 3) and to verify the effectiveness and implementation of (USGS) technical procedures associated with NNWSI activities.

### 2.0 ORGANIZATION TO BE AUDITED

United States Geological Survey (USGS) Denver, CO

### 3.0 AUDIT SCHEDULE

- o Pre-Audit Team Meeting, 1:30 p.m., March 10, 1986 at USGS
- o Opening Meeting, 9:00 a.m., March 11, 1986 at USGS
- o Audit Activities, March 11-14, 1986
- o Closing Meeting, Afternoon of March 14, 1986 or before

### 4.0 REQUIREMENTS TO BE AUDITED

The requirements to be audited are stated in 86-1-1 check list which was generated from the following documents:

- o NNWSI-NVO-196-17-Rev. 3
- o USGS QA Manual and implementing quality and technical procedures
- o Previous Audit 85-12

### 5.0 ACTIVITIES TO BE AUDITED

- o Programmatic QA areas
- o Technical detailed procedures
- o Previous audit findings

### 6.0 AUDIT TEAM MEMBERS

S. Singer, SAIC/QASC	Lead Auditor
N. Voltura, SAIC/QASC	Auditor
J. W. Estella, SAIC/QASC	Auditor
R. F. Cote, SAIC/QASC	Auditor in Training
F. D. Peters, SAIC/QASC	Auditor in Training
E. H. Oakes, SAIC/QASC	Technical Advisor
D. C. Newton, DOE/HQ	Auditor in Training
Paul Prestholt, NRC/HQ	Observer
Susan Bilhorn, NRC/HQ	Observer

WMPO AUDIT PLAN

NO. 86-2A

USGS DENVER COLORADO

PREPARED BY S. Singer DATE 2/18/86  
SAIC/QASC

APPROVED BY James Blaylock DATE 2/18/86  
WMPO PQMO

DISTRIBUTION:

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D. C. Newton, DOE/HQ  
Paul Prestholt, NRC/HQ  
Susan Bilhorn, NRC/HQ

Project File  
Record Center

NNWSI AUDIT PLAN 86-2B - MENLO PARK

Audit No. 86-2b  
Date 2/18/86

1.0 SCOPE

The purpose of this Audit is to verify by review of objective evidence the effective implementation of the Quality Assurance Program Plan as implemented by USGS at the Menlo Park, California facility.

The USGS QA program will be reviewed to assure that the requirements of NVO-196-17 (Rev. 3) and selected USGS technical procedures are being implemented in accordance with the provisions of the NNWSI Project.

2.0 ORGANIZATION TO BE AUDITED

United States Geological Survey (USGS) Menlo Park, California

3.0 AUDIT SCHEDULE

- o Pre-Audit Team Meeting, 1:30 p.m., March 17, 1986 at USGS
- o Opening Meeting, 9:30 a.m., March 18, 1986
- o Audit Activities, March 18-21, 1986
- o Closing Meeting, Afternoon of March 21, 1986 or before

4.0 REQUIREMENTS TO BE AUDITED

The requirements to be audited are stated in 86-2B-1 checklist which was generated from the following documents:

- o NNWSI-NVO-196-17-REV. 3
- o USGS QA Manual and implementing quality and technical procedures

5.0 ACTIVITIES TO BE AUDITED

- o Technical detailed procedures
- o Previous audit findings

6.0 AUDIT TEAM MEMBERS

A. E. Cocoros, SAIC/QASC	Lead Auditor
F. D. Peters, SAIC/QASC	Auditor in Training/Technical Advisor
E. A. Oakes, SAIC	Auditor/Technical Advisor
A. J. Rhodrick, DOE/HQ	AIT/Technical Advisor
Paul Prestholt, NRC/HQ	Observer
J. R. Rinaldi, QAD, DOE/NV	Auditor

7.0 AUDIT CHECK LIST NUMBERS

86-2B-1

WMPO AUDIT PLAN

NO: 86-28

USGS MENLO PARK, CALIFORNIA

PREPARED BY *S. Linger* DATE 2/18/86  
SAIC/QASC

APPROVED BY *James Blaylock* DATE 2/18/86  
WMPO/PQM

DISTRIBUTION:

All Team Members

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A. J. Rhodrick, DOE/HQ  
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Project File  
Record Center

ENCLOSURE 2



# United States Department of the Interior

GEOLOGICAL SURVEY  
BOX 25046 M.S. A18  
DENVER FEDERAL CENTER  
DENVER, COLORADO 80225

IN REPLY  
REFER TO:

March 14, 1986

## Memorandum

To: All USGS Participants, Nevada Nuclear Waste Storage  
Investigations

From: Chief, Branch of Nevada Nuclear Waste Storage Investigations

Subject: STOP-WORK ORDER

This orders the immediate cessation of most USGS work on NNWSI technical activities. The order applies to all work that meets all of the following three criteria:

- (1) The work is intended to produce site-characterization information -- that is, a description of the geologic, tectonic, or hydrologic conditions or processes of Yucca Mountain and its setting.
- (2) The work has not previously been approved in writing by this office and by DOE/WMPO as quality-assurance level III.
- (3) The work can be suspended without causing an irrecoverable loss of information that may later prove to be acceptable in the licensing process.

Work may continue in the following categories:

- (1) Administrative work, with the exception of procurement of equipment, materials, or supplies to be used in site-characterization activities.
- (2) Planning, both internal and as part of the preparation of DOE documents such as the Site Characterization Plan and the Exploratory Shaft Test Plan.
- (3) Work for which the suspension would cause an irrecoverable loss of information. Examples are the seismic monitoring network, monitoring of existing hydrologic networks, logging of neutron holes, monitoring of runoff events, etc.

- (4) Work in progress on degradable samples or features. Examples include mapping of freshly exposed trench walls (but not sampling of materials for analysis), long-term laboratory tests or experiments in which substantial time and cost is already invested, and laboratory measurements on "natural-state" samples that would degrade if the measurements were interrupted.
- (5) Preparation of publications presenting site-characterization information, but only to the point of readiness for colleague review.
- (6) Preparation and processing of abstracts for meetings if the submission deadline is July, 1986, or earlier.
- (7) Prototype testing, experimentation, and other research intended to develop and/or evaluate techniques or procedures to be applied later under quality-assurance requirements.
- (8) All work directed at implementing the requirements of the USGS Quality Assurance Plan (QAP).

Other activities that must continue will be considered but must be authorized by this office.

Except for those working on the FY 88 budget preparation, the Site Characterization Plan, or the technical requirements for the exploratory-shaft facility, implementing the QAP is the highest priority of the USGS/NNWSI at this time. Personnel should be redirected to QA implementation to the fullest extent possible. Those performing exempted work should also be redirected to the QA effort unless the work is of great urgency.

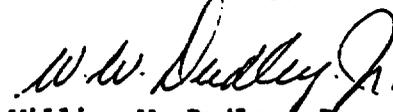
At this time I am not prepared to give specific instructions concerning contracts in place, as this requires coordination with Administrative Division personnel. Branch Chiefs, District Chiefs, the Regional Research Hydrologist (Central Region) or their administrative officers are requested to notify R. V. Watkins, Associate Chief, Branch of NNWSI, by memorandum of contracts that are supported wholly or in part by NNWSI funds. Please include a sufficient description of the scope of work to allow a preliminary determination of whether the work can continue, must be negotiated for temporary redirection, or must be suspended.

I have taken this action in consultation with and upon the recommendation of the USGS/NNWSI QA Manager, Joe Willmon, because of rapidly accumulating evidence that our implementation of our QAP has not been given the priority that it requires. A DOE audit completed today in Denver has confirmed the lack of satisfactory implementation in the activities directed by my office as well as in the scientific work. We are all at fault, and we must all contribute to the remedy. Identification of specific areas in which we must change or improve will be provided as soon as possible.

Assistant Director James F. Devine and NNWSI Project Manager Donald L. Vieth have been advised of and concur with the necessity for this order.

Neither the timing nor the mechanism of release from this order have been identified. However, I anticipate a task-by-task release, probably after special audits of readiness. I also anticipate that the period will range from several weeks to several months.

NNWSI funding will continue for work authorized in this memorandum or subsequently authorized in writing by me or Joe Willmon. Work that is performed in violation of this order will not be reimbursed from NNWSI funds. Documentation of personnel activities on NNWSI funding is required as of March 17, 1986. More detailed instructions will be issued next week.

  
William W. Dudley, Jr.

cc: J. F. Devine, Asst Director, Engineering Geology  
D. L. Vieth, Director, Waste Management Project Office, DOE

WWD/pnb  
0761P

ENCLOSURE 3

'96, MAY 13 12:04

APR 28 1986

W. W. Dudley, Jr.  
Technical Project Officer  
U. S. Geological Survey  
P. O. Box 25046  
Mail Stop 418  
Denver, CO 80225

**SUSPENSION OF U. S. GEOLOGICAL SURVEY (USGS) WORK ON NEVADA NUCLEAR WASTE STORAGE INVESTIGATIONS (NWSI) PROJECT ACTIVITIES BY WASTE MANAGEMENT PROJECT OFFICE (WMPO) (WMPO ACTION ITEM #86-1169)**

This memo is a follow-up to the Quality Assurance (QA) Audit 86-2a and QA Surveillance WMPO/NV-SR-86-023 conducted on the USGS efforts that support the NWSI Project. I want to formally express my concerns about the situation with regard to QA at the USGS. It has been reported to me that the USGS technical staff, people who are committed to executing scientific studies, have not achieved a full appreciation of the importance of QA on this program. This is clearly a USGS management problem. After these many years of effort and expenditures the practice of QA at the USGS has not reached the level necessary to satisfy our standards. Also, it is doubtful that the present USGS work would meet the U. S. Nuclear Regulatory Commission's (NRC) expectations.

I have reviewed your memorandum suspending work at the USGS pursuant to the audit. Your actions are a positive management step necessary to correct the long-standing organizational deficiencies at the USGS in the practice of QA. We believe that your expeditious action in this area was essential in communicating USGS management recognition of the seriousness of this problem within the USGS, and a resolve toward meeting the requirements that are customary in the regulatory arena. It is essential that your scientific staff fully understand the situation, commit to meeting the requirements, and conform to the process as defined in your internal operation manuals. There is no longer any place in this Project for a scientific staff that does not accept and perform in accordance with the requirements established for QA.

We have spent some time reviewing the situation with the Stop Work Order. While we are generally in agreement with your approach, we believe that some additional stipulations need to be added to your directive. The purpose of this memo is to announce the WMPO suspension of work, expand somewhat the scope of your original statement, and outline the role of the Waste Management Project Office (WMPO) in reviewing the work situation before it is restarted.

This suspension of work applies to all USGS work currently being performed for the NWSI Project with the following exceptions:

W. W. Dudley

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1. Planning, both internal and as part of the preparation of the Site Characterization Plan (SCP), the Exploratory Shaft Test Plan (ESTP), the Environmental Assessment (EA), and the Seismic Tectonic Position Paper (STPP: NMB-379).

2. Administrative/management work, with the exception of procurement of equipment, materials, supplies, and services to be used in technical activities unless such procurement can be shown to be critical to the success of those technical activities allowed to continue. If so, the details, including the quality requirements to be applied, shall be provided to WMPO for concurrence prior to proceeding.

3. Work for which the suspension would cause an irrecoverable loss of information.

4. Work in progress on degradable samples or features and laboratory measurements on "natural-state" samples that would degrade if the measurements were interrupted.

5. Preparation and processing of abstracts for meetings if the submission deadline is July 1986 or earlier. These abstracts must be specifically identified and the pertinent information, including manpower resources required, must be provided to the Waste Management Project Office (WMPO) for evaluation of the impact on resources required to achieve implementation of the QA Program.

6. Prototype testing, experimentation, and other research intended to develop and/or evaluate techniques or procedures provided these activities have been approved by WMPO as Quality Assurance Level III. Continuance of these activities must not prevent adequate manpower resources from being applied to the implementation of the QA Program requirements.

7. All work that is necessary to achieve adequate implementation of the USGS QA Program, i.e. procedure development, establishment of Quality Assurance Level assignments, correction of QA Program deficiencies, etc.

This suspension of work also applies to NNWSI Project related activities currently being performed for USGS by subcontractors unless the work can be clearly exempted as described above.

\*Specific activities in these categories or others that USGS strongly believes should be allowed to continue must be identified to WMPO in writing within 10 working days after receipt of this letter. The information to be provided must include the following:

- o Work Breakdown Structure (WBS) task title and numbers
- o Principal Investigator
- o Justification/rationale of why the work must proceed
- o Controls/procedures to be used to assure the data meets QA program requirements.

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V. W. Dudley

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APR 28 1986

Except for the work that must continue as previously noted, achieving adequate implementation of QA Program requirements is the highest priority of USGS/KNWSI Project at this time. Personnel should be redirected to QA Program implementation to the fullest extent possible. Accordingly, you are directed to develop a plan for the assignment and approval of Quality Assurance Levels (see Surveillance Report WMPO/NV-SR-86-023) which shall include the support package agreed to during the Quality Assurance Level Assignment Sheet (QALAS) Workshop meetings at Science Applications International Corporation during April 2, 9 and 10, 1986, and a plan for correcting the QA Program deficiencies identified during USGS Audit 86-2a so that the USGS work for the KNWSI Project can resume. This plan should identify the specific tasks to be accomplished, establish priorities, and provide a schedule for implementation. Emphasis should be placed on correcting the deficiencies in those areas where work is allowed to continue, i.e. establishment of Quality Assurance Level assignments, qualification and certification of personnel, indoctrination and training, etc. This plan must be submitted to WMPO for review and approval by May 1, 1986. It should be noted that WMPO will perform periodic surveillances of USGS activities to ensure that work is suspended until all required actions are completed and to evaluate progress relative to QA Program implementation.

The conditions for lifting this suspension are as follows:

1. Approval by WMPO of proposed corrective actions and schedules for implementation for the reported audit findings.
2. Approval by WMPO of the USGS Quality Assurance Program Plan (QAPP) revised as a result of the audit.
3. Completion of indoctrination and training of all USGS personnel responsible for achieving quality with the KNWSI program.
4. WMPO approval of Quality Assurance Levels for each KNWSI Project item/activity for which USGS is responsible.
5. WMPO approval of a USGS plan to provide resources for QA coverage at the various locations where USGS is performing ongoing KNWSI Project activities.

At the completion of all of the above conditions a formal removal, in writing, of the suspension will be issued to USGS by WMPO.

Based on the number and nature of the deficiencies identified during USGS Audit 86-2a, it is evident that the USGS QA staff must be supplemented with additional experienced QA personnel in order to assure proper implementation of the USGS QA Program for the KNWSI Project. An unmitigated commitment to achieving this goal is clearly required. If you have any questions, or require further information, please advise.

WMPO:JB-912

Original Signed By  
Donald L. Vieth

Donald L. Vieth, Director  
Waste Management Project Office

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W. W. Dudley

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APR 28 1966

cc:

V. J. Purcell, DOE/HQ (RW-20), FORS  
D. C. Newton, DOE/HQ (RW-23), FORS  
James Knight, DOE/HQ (RW-23), FORS  
Allen Jelacic, DOE/HQ (RW-24), FORS  
J. R. Wilmon, NSGS, Denver, CO  
M. E. Spaeth, SAIC, Las Vegas, NV  
G. H. Klein, SAIC, Las Vegas, NV  
A. E. Cocoros, SAIC, Las Vegas, NV  
E. J. Singer, SAIC, Las Vegas, NV  
C. R. Rinaldi, QAD, DOE/NV  
T. W. Witherill, NTSO, Mercury, NV  
W. D. Dixon, WMFO, DOE/NV  
L. P. Skousen, WMFO, DOE/NV  
P. E. Blanchard, WMFO, DOE/NV  
James Blaylock, WMFO, DOE/NV

TOTAL P. 1

5

# ENCLOSURE 4

## IMPLEMENTATION OF THE QA MANUAL NNWSI-USGS QA PROGRAM

- 1.01 Manual Upgrade/Maintenance: The manual is not yet complete with at least 4 to 6 additional chapters to be added soon. The existing chapters are subject to revision which should occur semi-annually, at least for the first year. The first revision should be planned for the end of the second quarter, FY 86.
- 2.01 Management Assessment: This takes place once per year, and requires gathering the essential documents to provide for the review. In the view of QA, this is an important step and cannot be taken lightly as it affects the program's credibility. Action on this element should be directed toward the end of the year.
- 2.02 Indoctrination/Training: This consists of familiarizing the program participants of the QA requirements through exposure to the controlling laws, documents, and implementing procedures. A program of required reading, and meeting presentation should be made to all participants for completion within a six-month period.
- 2.03 Worker Certification: It is required that evidence of a worker's credentials be retained as accredited by a more senior Program participant. This can be accomplished by completing the form as presented in procedure NWM-USGS-QMP-2.03. A system for assuring completion of this task and its required updating needs to be put into place. This should begin at once, and six months seems to be a reasonable time to accomplish it.
- 3.01 Levels Assignment: All activities or items concerning quality  
3.02 related work are required to have an assigned quality level. By the procedure, this level assignment is to be done by the Principal Investigator under the assurance responsibilities of the QA office. Experience has already shown that this element of the PI's work will require a significant amount of assistance from the QA office. This is envisioned as being a continuing task with the heaviest QA involvement at the front end, which may strain the manpower resources for a short period. Because of the retrofit necessity, this task must begin at once.
- 3.03 Software QA: This is another item assigned to the Principal Investigator. However, it will require surveillance and assistance for implementation. The implementing procedure remains to be written for this criteria, awaiting the issuance of the Project SOP.
- 4.01 Procurement Document Control: All procurement must be done under QA procedures according to the QA Manual. The QA office has responsibility to assure that the PI and the purchasing office have complied.

- 5.01 **Technical Procedures:** This activity is primarily a responsibility of the Principal Investigator. However, experience has shown that a large QA Office commitment is required to keep the generation of the essential procedures up with the work being performed. "Mechanizing" the procedure preparation has been a big help, but it does not complete the requirement. It is a QA office responsibility to perform the procedure distribution and to keep the essential records of the distribution and revisions, which will be further discussed under "document control". The preparation, approval and control of technical procedures is an on-going activity which requires multiple level involvement.
- 6.01 **Document Control:** This is a QA office assignment requiring considerable supervisory and clerical help. A tracking system is required to assure that the necessary distribution is realized, and to provide the record that the distribution was made in a timely manner. Work on this tracking system should begin at once, but its completion is of lower priority than many other items of implementation. The main thrust for priority in this section is the potential effectiveness for its use in management of the QA implementation.
- 7.01 **Control of Purchased Material:** This criteria pertains to equipment and critical purchases that could affect the quality of the work. The QA office effort is largely one of record keeping, and assurance that the job is getting done. The procurement office is under instruction to enforce the procedures as described in this procedure. Further details need to be spelled out in this area, which will be included in the next revision of the QA Manual. Responsibilities for the revisions continue with the QA office, while the responsibility for vendor certification has been assigned to Los Alamos National Laboratory for the current fiscal year.
- 10.1 **Surveillance:** This is the process of policing the activities to see that the QA procedures are being followed. While the QA office does not perform all the surveillances, they are responsible for keeping track of what surveillances were performed, and to follow up on the appropriate dispositions. Surveillance of the various tasks of the QA Program will begin immediately, and will continue.
- 11.01 **Tentative Technical Procedures:** For those work areas where a standard procedure cannot be prepared, provision is made in the QA Manual to document the work method and pertinent descriptions in a tentative format for use until the work has progressed to a state where a formal definite procedure can be prepared. This is the assigned responsibility of the Principal Investigator. However, assistance and or advice will be required in the process. This assistance is available from the outset; and the PI's will be encouraged to use this procedure whenever it legitimately can be used.
- 12.0 **Calibrations:** All equipment used must be calibrated by the user on a schedule described in the technical procedure. The rules on calibration are strict, and complete records are a requirement. The QA

office is responsible only for the record portion and for providing the regular schedule, but this responsibility extends to routine reminders of when recalibrations are due, in addition to assuring that the calibrations are being performed according to the procedures. This task also requires a tracking system to be used as a management tool as well as for providing the record of the calibrations performed. While there already exists a QA calibration file, it requires revision and updating to be effectively used in the management sense. An update of this file will be a mid-level priority, with emphasis on keeping the calibrations up to date.

15.01 Nonconformance/Corrective Actions: Any nonconformance prepared by  
16.01 an audit, surveillance, or other action must be handled according to a rigid procedure, until fully dispositioned. The QA office will be preparing some of the nonconformances for various reasons, but the bulk of the time will be consumed by resolving the issues, record keeping and paper handling.

17.01 Records Management: All documents supporting the data that will be used in the licensing process must become part of the official record. QA records are well defined, and it is the responsibility of the QA office to achieve a complete record. Currently the records program, in compliance with and under training of the Project office in Las Vegas, is performed by the SAIC-Golden office. It is expected that revisions to the established records procedures will be required as the overall program evolves and when SOP-17 is issued. Implementation in this area is already underway and it will continue uninterrupted by other priorities.

18.01 Audits: Auditing is a large part of the policing activity, and it is an important part of the QA program. This activity requires specially qualified participants, especially in the role of the lead auditor. The audits are performed according to a definite procedure, including scheduling and planning. The scheduling, assurance of their completion, and follow up on audit findings is a requirement of the QA office. Performance of the USGS internal audits is currently contracted to Los Alamos National Laboratory.

QA Administrative Function: The effort of administration is necessary for program planning and implementation, to hold the work effort together, and to assist with the fire fights as they occur. QA program evaluation, understanding of Project QA requirements and their changes; and directing any resulting corrective actions also is an important part of the administrative function.

IMPLEMENTATION OF THE QA MANUAL  
NNWSI-USGS QA PROGRAM

<u>Task Description</u>	<u>Man Mos</u>	<u>(MONTH)</u>												
		<u>10</u>	<u>11</u>	<u>12</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	
1.01 Manual Upgr/Maint:	5.5				*****							*****		
2.01 Mgmt Assessment:	1.0				*****							*****		
2.02 Indoctr/Training:	6.5	*****												
2.03 Worker Cert:	1.25			*****										
3.01 Levels Assignment:	3.0	*****												
3.02		*****												
3.03 Software QA:	1.25									*****				
4.01 Procurmt Dcmt Cont:	2.0	*****												
5.01 Tech Procs:	13.0	*****												
6.01 Document Cont:	3.5	*****			*****				*****					
7.01 Cont Purch Matl:	.75	*****												
10.01 Surveillance:	2.25	*****												
11.01 Tentative Proc:	1.75	*****												
12.01 Calibrations:	2.5	*****												
15.01 Nonconformance/ 16.01 Corrective Act:	3.25	*****												
17.01 Records Mgt:	25.0	*****												
18.01 Audits:	2.5							*****						
QA Admin Function:	17.0	*****												



ENCLOSURE 5

**Department of Energy**

Nevada Operations Office  
P. O. Box 14100  
Las Vegas, NV 89114-4100

SECRET CONTROL CENTER

'86 APR 23 P3:15

APR 17 1986

J. W. Dudley, Jr.  
Technical Project Officer for NNWSI  
U.S. Geological Survey  
Post Office Box 25046  
418 Federal Center  
Denver, CO 80225

WASTE MANAGEMENT PROJECT OFFICE (WMPO) AUDIT OF U.S. GEOLOGICAL SURVEY (USGS) QUALITY ASSURANCE PROGRAM (86-2a) DENVER (WMPO ACTION ITEM #86-1103)

Enclosed is the report of Quality Assurance Audit 86-2a which was conducted for the Waste Management Project Office (WMPO) at the U.S. Geological Survey (USGS) Denver on March 11-14, 1986.

The audit was conducted to verify implementation and evaluate the effectiveness of the USGS/Denver Quality Assurance Program Plan and its procedures with respect to the requirements of the NNWSI Project NVO-196-17 (Rev. 3) and the applicable SOPs, and to verify the implementation of the Quality Assurance Program as it relates to the USGS Quality Assurance Manual. The audit did not imply acceptance or non-acceptance of the USGS QAPP and procedures. Emphasis was placed upon the status of the USGS technical areas and the reviews of the USGS published technical reports.

The audit team reviewed sufficient objective evidence related to USGS work activities to determine whether the QA program requirements were being satisfactorily implemented per NNWSI-NVO-196-17 (Rev. 3) and its applicable SOPs.

As a result of the evaluation, the audit team identified twenty-two (22) deficient conditions adverse to quality and five (5) significant observations. This large number of significant audit findings indicated an almost total lack of QA program implementation and therefore, the Lead Auditor concluded that he would recommend WMPO issue a Stop Work Order for USGS/Denver and Menlo Park facilities. Audit Finding Sheets 862a-1 through 862a-22 are enclosed for your disposition. Please review the findings, complete the response section, and return your response within thirty (30) working days after receipt of this report.

Unless otherwise noted in the audit report, formal response to the observations is optional. All responses to the findings shall be addressed to the Director, WMPO.

W. W. Dudley, Jr.

-2-

If you have any questions regarding this audit, please contact James Blaylock at FTS 575-1125.

WMPO:JB-1046

Enclosures:  
As stated

cc w/encl.:

V. J. Cassella, DOE/HQ (RW-22), FORS  
D. C. Newton, DOE/HQ (RW-23), FORS  
E. W. Sulek, Weston, Rockville, MD  
J. R. Willmon, USGS, Denver, CO  
J. A. Pattillo, Los Alamos, NM  
S. H. Klein, SAIC, Las Vegas, NV  
A. E. Cocoros, SAIC, Las Vegas, NV  
S. B. Singer, SAIC, Las Vegas, NV  
E. H. Oakes, SAIC, Reno, NV  
R. W. Gray, MED, DOE/NV  
M. B. Blanchard, WMPO, DOE/NV  
James Blaylock, WMPO, DOE/NV  
Paul Prestholt, NRC/HQ  
Susan Bilhorn, NRC/HQ

  
Donald L. Vieth, Director  
Waste Management Project Office

WMPO QUALITY ASSURANCE AUDIT REPORT

AUDIT NUMBER: 86-2a OF USGS/DENVER

CONDUCTED ON: MARCH 11-14, 1986

PREPARED BY *A. C. Lewis*  
LEAD AUDITOR SAIC/QASC

DATE *7/8/86*

APPROVED BY *James B. Baylock*  
WMPO PQM

DATE *4/10/86*

## 1.0 INTRODUCTION

This report contains the results of the Nevada Nuclear Waste Storage Investigations (NNWSI) Project Quality Assurance (QA) Audit Number 86-2a of the U.S. Geological Survey (USGS) conducted on March 11-14, 1986. The audit was conducted in accordance with the requirements of the Waste Management Project Office (WMPO) QA Audit procedure QMP-18-01.

The audit was conducted to verify implementation and evaluate the effectiveness of the USGS/Denver Quality Assurance Program Plan and its procedures with respect to the requirements of the NNWSI Project NVO-196-17 (Rev. 3) and the applicable SOPs, and to verify the implementation of the Quality Assurance Program as it relates to the USGS Quality Assurance Manual. The activities audited were:

- o Programmatic Quality Assurance; and
- o Technical Activities.

Within these activities, the audit team concentrated its efforts in the following areas:

- o Quality Assurance operations;
- o Laboratory test activities; and
- o Technical activities and documents.

A checklist was used to expedite the review of documents and records in the USGS files and to record information resulting from discussions with USGS personnel. The checklist items were developed using the following documents:

- o NNWSI Project NVO-196-17 (Rev. 3) and the applicable SOPs
- o USGS QAPP and QA Procedures
- o USGS Technical Procedures.

## 2.0 AUDIT TEAM PERSONNEL

S. B. Singer, SAIC/QASC, Lead Auditor  
N. A. Voltura, SAIC/QASC, Auditor  
J. W. Estella, SAIC/QASC, Auditor  
R. F. Cote, SAIC/QASC, Auditor in Training (AIT)  
F. D. Peters, SAIC/QASC, Auditor in Training/Technical Advisor  
D. C. Newton, DOE/HQ, Auditor in Training (AIT)  
E. H. Oakes, SAIC, Auditor/Technical Advisor  
Paul Prestholt, NRC/HQ, Observer  
Susan Bilhorn, NRC/HQ, Observer

## 3.0 SUMMARY OF RESULTS

The audit team agreed that the USGS was not complying with the requirements of their Quality Assurance Program Plan and were not adequately implementing the existing supporting procedures.

A total of twenty-two (22) findings of nonconformance and five (5) significant observations were reported representing thirteen (13) of the sixteen (16) elements reviewed. This resulted in a recommendation by the Lead Auditor to the WMPO Project Quality Manager (PQM) that a Stop Work Order be issued. The details of the findings and observations are described in Section 5.0 of this report. To the extent audited, the following elements were found to be either in compliance or are not addressed by the USGS QA Program and are as follows:

Element 6. Document Control: Was not audited.

Element 10. Inspection: USGS does not perform inspection.

Element 11. Test/Experiment Control: No findings.

Element 14. Inspection, Test, and Operating Status is covered under other procedures at USGS.

Element 15. Nonconformance: None have been written to date.

The balance of the 18 QA criteria were audited. A fundamental problem in conducting this audit was that procedures required by NNWSI NVO-196-17, Rev. 3 were not implemented or they did not exist. Therefore, due to both of these problems, the USGS was determined to be not in compliance with NNWSI NVO-196-17, Rev. 3. It was also noted that there was a lack of training of personnel in all areas of the USGS Quality Assurance Program.

#### 4.0 AUDIT MEETINGS

The audit commenced with an opening meeting on March 11, 1986. The purpose, scope, and agenda of the audit were reviewed with the USGS personnel and USGS assigned coordinators for the various elements to be audited. The results of the audit were thoroughly reviewed with USGS personnel at a close-out meeting held on March 14, 1986. At that time, a handwritten rough draft of the proposed audit findings and observations was given to USGS management.

#### 4.1 OPENING AND CLOSING MEETING ATTENDEES

Paul Prestholt, NRC  
Nancy Voltura, SAIC/QASC  
Carl Newton, DOE/HQ  
Forrest Peters, SAIC/QASC  
Ed Oakes, SAIC, Reno, NV  
Leonard Wallitz, USGS/Denver  
Gene Rush, NHP, Denver  
Warren Hofstra, NHP, Denver  
William Dudley, USGS/Denver  
Sam Singer, SAIC/QASC  
Joe Willmon, USGS/Denver  
Susan Bilhorn, NRC/DWM  
Ron Cote, SAIC/QASC  
John Estella, SAIC/QASC  
Paul Carrera, USGS/Denver

\*\*Susan Shipley, USGS/Menlo Park

Bob Peterson, BOR/Denver  
Art Guthrie, Los Alamos, NM  
\*James Blaylock, PQM/WMPO  
\*Darrell Porter, SAIC/Golden, CO  
\*Bob Wise, SAIC/Golden, CO  
\*Richard Watkins, USGS/Denver  
\*William Nilson, USGS/Denver  
\*Robert Raup, USGS/Denver  
\*Ed Cocoros, SAIC/QASC

\* Exit Meeting only

\*\* Opening Meeting only

#### 4.2 PERSONS CONTACTED DURING THE AUDIT

Paul Carrera, USGS  
Joe Willmon, USGS  
Susan Shipley, USGS  
Arthur Guthrie, Los Alamos  
Joe Rosenbaum, USGS  
L. A. Anderson, USGS  
Linda Watson, SAIC  
M. S. Whitfield, USGS  
Chuck Freestone, USGS  
Bob Peterson, USGS  
Eugene Rush, USGS  
Darrell Porter, SAIC

#### 5.0 FINDINGS AND OBSERVATIONS

The following findings of nonconformance were recorded during the audit. The requirement, documents, and details of the requirements are presented in the respective attached Audit Finding Sheets Numbers 862a-1 thru 22.

Finding No. 862a-1

The USGS QA Program does not have a WMPO-approved QA procedure in place to address source evaluation and selection.

Finding No. 862a-2

A J-13 water sample was found in a container which had no identification other than the number J-13. When the engineer was asked for any other documents that were traceable to the sample, his reply was, "These documents are not available."

Finding No. 862a-3

A sample review of procurement documents identified inconsistent implementation of USGS-QMP-4.01 in the following areas:

1. Neither the purchase requisition nor the NNWSI Project QA Procurement Form consistently identify any of the following for QA Level I items or services: technical requirements, QA Program requirements, Rights of access, Documentation requirements, provision for reporting nonconformances. Requisitions # 4810-0116, 1/14/86; 4810-0041-86, 10/1/85; 4810-0109-86, 1/8/86; 4810-33310T, 12/27/85; 4810-0088, 12/17/85.
2. Lack of documented evidence of USGS' QA Manager's review and approval of the requisition and the QA Procurement form. Requisitions found deficient were #4810-0017-86, 9/18/85; #4810-0015-86, 8/20/85; #4810-0007-86, 8/85.
3. USGS personnel have approved the USGS NNWSI Project QA Procurement form for the USGS QA Manager without documented authority to do so.
4. Copies of all as-issued QA Level I procurement documents are not being forwarded to WMPO.

Finding No. 862a-4

NNWSI-USGS-QMP-18.01, Rev. 0, does not address program provisions for conducting external audits of suppliers/contractors to USGS.

Finding No. 862a-5

A review of the Rock Properties Measurement Lab revealed lack of compliance/implementation in the following areas:

1. The QA Calibration Form is not being completed for each instrument requiring calibration and is not being sent to the USGS QA Office prior to the instrument's use.
2. The USGS QA Office is not entering this information into a calibration system -- to include all affected instruments.
3. The calibration status of instruments is not being displayed at a readily accessible location. Stickers are not affixed to each instrument denoting the calibration status.
4. Nonconformance reports have not been written for instruments that display no calibration status sticker.
5. No documented certifications are on file for personnel performing equipment calibrations.
6. Calibration standards used for calibration of instruments are not traceable to the National Bureau of Standards (NBS) or other known standards. Where NBS standards do not exist, the reference standard is not supported by certificates, reports or data sheets attesting to the date, accuracy and conditions under which the results were obtained.

7. The method and interval of calibration for each item has not been defined, based on the type of equipment stability, characteristics, required accuracy, intended use, manufacturer's recommendations or other conditions that affect measurement controls.
8. Instruments out of calibration are not tagged or segregated.
9. Calibration forms, which are QA Level I or II documents, are not processed as NNWSI Project QA records.

Finding No. 862a-6

There is no documentation of indoctrination and training of USGS personnel performing quality related activities. It should also be noted that there is no apparent central control or accountability of the USGS personnel working on the NNWSI Project to ensure that these personnel are properly indoctrinated, trained, and certified.

Finding No. 862a-7

There are no certifications of personnel who perform reviews of technical documents. In addition, many of the USGS technical personnel certifications do not define the area of responsibility for which these personnel are certified. Examples of such certifications are those of the following personnel: Edwardo A. Rodriguez, David A. Ponce, Gary D. Hamilton, John H. Healy, Robert J. Munroe, Brennen O'Neill, William H. Prescott, Joann M. Stock, Joseph F. Svitek, Walter E. Wendt, Robert H. Colburn, Edward E. Criley, Ronald M. Kaderabek, Jeff Wilson, Dean Whitman. In some instances, the work experience included on the certifications of USGS technical personnel does not support the activities which they are certified to perform. Examples of such certifications are those of the following personnel: Susan Shipley, Paul E. Carrara, Richard Hay, Pamela Jenks, Christine Arthur, Michael Chornak, Ibrahim Palaz. Also, the certifications of Robert O. Castle and Kenneth A. Sargent were not approved by the next higher supervisory level as required by USGS

procedure NNWSI-USGS-QMP-2.03, Rev. 0, paragraph 3.2. Certifications for Castle and Sargent had no approvals. It should be noted that the USGS QA program does not establish certification criteria for the USGS technical personnel. The basis for certification as described on the USGS certification form is subjective in nature. This also applies to the certification of Fenix and Scisson geologists who implement USGS activities. In addition, there are no provisions in the USGS QA program for USGS to either accept or concur with lab contractor's certifications since these certifications are performed by F&S personnel.

Finding No. 862a-8

The USGS QA program does not adequately address provisions for USGS QA personnel and QA support contractors to stop unsatisfactory work. Although USGS-NNWSI-QMP-10.01, RO, para. 4.4 does state that the QA manager has authority to stop work during course of a surveillance, it is not documented as to how this activity is implemented. It should be noted that the stop work authority appears to be limited to those activities identified during the surveillance. No apparent provisions exist to stop unsatisfactory work identified during audits, inspections or by other means.

Finding No. 862a-9

The USGS QAPP-Rev. 0, Sec. QMP-1.0 does not delineate the responsibility and authority of each organization involved in the execution of activities affecting quality, and does not address external and internal interfaces between organizational units. In the case of internal interfaces, the Geological Division QA Specialist Central and QA Specialist Western Division, and Nuclear Hydrology QA Specialist responsibilities and authorities are not defined and documented. The aforementioned QA personnel as depicted in the USGS Organization Chart do not appear to have access to management levels such that they have the required organizational freedom including sufficient independence from cost and schedule when opposed to safety considerations. Note: see AFS 862a-1. Additionally, the USGS QA organization does not clearly delineate the authority and responsibility

for the external interfaces between organizational units performing activities affecting quality e.g., Los Alamos National Laboratory which is performing internal and external audits for the USGS and the Bureau of Reclamation which is performing site characterization activities including, but not limited to, surface hydrology.

Finding No. 862a-10

The USGS QAPP, Rev. 2 does not address provisions for the Quality Assurance program to control activities associated with operation of the core library facilities at the NTS for handling, storing, and distributing material samples and core for the commercial nuclear waste management activities at the NTS as required by the NNWSI Quality Assurance Plan. Note: refer to AFS 862a-11 for additional information.

Finding No. 862a-11

The USGS Quality Assurance program does not maintain WMPO approved QA administrative procedures for the storage, handling, and shipping of core samples and other materials associated with NNWSI Project activities to preclude damage, loss, or deterioration by environmental conditions. This condition is of particular concern since the USGS is responsible, in part, for the operation of the core library facilities at the NTS including, handling, storing, and distributing material samples and core for the commercial nuclear waste management activities at the NTS. Note: refer to AFS 862a-10 for additional information.

Finding No. 862a-12

The USGS Quality Assurance Plan does not address provisions to be established for the qualification of personnel, equipment, and procedures and for the control of special process verification methods to be documented for core sample preparation. This condition is of particular

concern since the USGS has and is presently processing core samples for NNWSI Project activities prior to the development, review, and approval by WMPO of these special process procedures.

Finding No. 862a-13

(Part 1) Many of the publication files requested for review did not contain peer-review comments. In several publication files that did contain peer-review comments, resolution of the comments by the author(s) was unclear.

(Part 2) WMPO asked several interviewees to produce the written peer-review procedures in effect prior to NNWSI-USGS-QMP-3.04, R0; evidence that these procedures existed was not produced.

Finding No. 862a-14

The USGS has been and is performing numerous site investigations for the NNWSI Project, as listed in the Work Breakdown Structure Dictionary, without any approved site investigation plans, and therefore, has been and is violating the QA Program requirements (See AFS 862a-14). The referred paragraphs clearly prohibit any site investigations from being performed, until and unless, a site investigation plan has been prepared, technically reviewed, and approved by WMPO.

It is true that extensive plans are in existence, or are in preparation, for the Site Characterization Plan (SCP) and the Exploratory Shaft Test Plan (ESTP), but these plans are not in effect at this time. The USGS has generally failed to provide, or to technically review, site investigation plans for their activities within the site exploration phase of this project.

It is also true that the USGS did prepare a Work Plan for the USGS Participation in the Nevada Nuclear Waste Storage Investigations Project, for the fiscal year 1985 activities, but this was apparently a preliminary draft which was never completed, reviewed, or submitted to WMPO for

approval. A similar document was also prepared for the fiscal year 1986, but again, this was also apparently a preliminary draft which has not yet been completed, reviewed, or submitted to WMPO for approval. These documents do not therefore, fulfill the requirements of NVO-196-17, Para. 3.2.2 and 3.2.3. (See Audit Finding 862a-15.)

Finding No. 862a-15

The USGS QAPP does not provide for the planning of the site investigation activities affecting quality as required by Para. 2.1 of NVO-196-17, Rev. 3, as further amplified in Para. 2.1.2 of SOP-02-01, Rev. 0, and Para. 3.2.2 and 3.2.3 of NVO-196-17, Rev. 3.

Finding No. 862a-16

Certifications of audit personnel who have performed supplier evaluations are not on file at USGS. Therefore, the acceptability of the supplier evaluations performed by these individuals cannot be determined.

Finding No. 862a-17

USGS contracts with various support contractors (e.g.) Inst. of Geophysics/Planetary Physics, Petrographic Services, Colorado School of Mines, and others do not specify that these contractors will implement the USGS QA Program for their activities nor does objective evidence exist to demonstrate that these contractors have an equivalent program which meets the requirements of the NNWSI Project QA Plan.

Finding No. 862a-18

The USGS QA program does not address provisions to control the utilization of limited calendar life items or samples (e.g., water samples) to assure that these items or samples are not used after such time that their chemical and physical properties may change which would affect the resulting data.

Finding No. 862a-19

There is no objective evidence to support performance of the required QA Manager review. In addition there are no provisions in the USGS technical procedures to require that this sample documentation be provided to the USGS QA Manager for review.

Finding No. 862a-20

Copies of some required records, such as audits and reviews of technical publications, are neither identifiable or retrievable.

Finding No. 862a-21

1. USGS records are being processed/reviewed using an unapproved QA procedure - "QA Records Management Guidelines" dated 1/28/86.
2. Measures have not been established to identify/document those personnel who are authorized to validate records.

Finding No. 862a-22

No documentation, USGS Corrective Action Request (CAR), has been generated to identify numerous recurring conditions adverse to quality. There are 29 outstanding/open audit findings identified by Los Alamos for USGS which have not been resolved; many of these identify recurring conditions.

Observations

The following observations were noted during the audit:

Observation No. 01

A report prepared by Will Carr (OFR-84-854) met the "Letter" of the requirements described in NNWSI-USGS-QMP-3.04, RO (Technical Review of NNWSI Publications). This procedure states, in part, that there will be

two peer reviewers for each report prepared by the USGS. One of the reviewers of this open-file report, however, recommended (in writing) that another geologist review the report because of his familiarity with certain parts of the subject matter. There is no record of this third review taking place. Therefore, a question arises concerning the adequacy of the technical review of this publication.

#### Observation No. 02

In NNWSI-USGS-QMP-17.01, RO, Sec. 5, Para. 5.4.4 it states that documents must be sent to the "Record Processing Center" within two weeks of completion. This schedule seems rather unrealistic, and may require a revision of the procedure.

#### Observation No. 03

The USGS has adopted a procedure (QMP-3.04, Rev. 0) for the technical review of NNWSI-USGS publications, but this procedure does not address the problem of data, interpretations, conclusions, recommendations, and/or reports which are not "published" officially by the USGS. The danger exists that some data, interpretations, conclusions, recommendations and/or "reports" could be used for a Quality Level I purpose, without any technical review, because the USGS QAPP does not address this problem. If this did happen, then it would be a violation of the intent of SOP-02-01. The USGS should address this problem somehow.

#### Observation No. 04

Part 1 - NNWSI-USGS-QMP-2.01, Rev. 0, requires that the status, adequacy and effectiveness of the NNWSI-USGS Quality Assurance Program be assessed annually. This assessment is required to be documented in a Management Assessment Report which is to be issued by October 31 of each year. This procedure carries an effective date of 8/24/85 and was approved by WMPO on

9/27/85. No Management Assessment Report has been issued to date, presumably due to the short time the USGS QA Program has been implemented. Based on discussions with the USGS QA Manager, this assessment is scheduled to be performed in September of 1986.

Part 2 - Per the USGS procedure, the USGS Assistant Director assigns responsibility for resolving quality-related problems and conditions adverse to quality which are identified in the Management Assessment Report. There is no method described regarding how these quality-related problems and conditions adverse to quality are documented, tracked or verified, for closure and there is no apparent involvement by Quality Assurance in this process. A response to this observation is required.

#### Observation No. 05

Based on the number and nature of the findings identified as well as the USGS estimates of manpower necessary to effectively implement the USGS QA Program, it appears evident that the USGS QA organization is inadequately staffed to achieve proper implementation of the QA Program at USGS.

### 6.0 CORRECTIVE ACTION

A written response to Audit Finding Sheets (AFSs) 862a-1 through 862a-22 (enclosed) is required. USGS should review and investigate the findings to determine the cause and schedule appropriate action to prevent recurrence. The response to the findings shall be in writing and included on, or attached, to the AFSs for return to WMPO within thirty (30) working days after receipt. In the event that the corrective action cannot be completed within thirty (30) days, the response shall indicate a schedule date for completion. A follow-up response by USGS must be sent to WMPO when the action has been completed. All responses shall be addressed to the Director, WMPO, and a copy shall be sent to the Lead Auditor (S. B. Singer, SAIC). A formal answer to all observations except observation No. 4 is optional. Observation No. 4 requires a response.



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-02  
6/85

(To be used for all AFSs with added sheets as required.)

Audit Finding No. 862a-1 Audited Checklist Reference 862a-1-7.1.1-2

Audited Organization USGS - Denver

Organization Unit QA Activity Control of Purchased Material, Equipment and Services

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) N. Voltura/S. Singer

Requirement (Cite) NNWSI-SOP-02-01, Rev. 0 (1) Para. 5.1.1 states in part: "Activities that affect quality shall be prescribed by documented instructions, procedures ... of type appropriate to the circumstances and shall be accomplished in accordance (cont'd

Finding Contrary to the above, the USGS QA Program does not have a WMPO-approved QA procedure in place to address source evaluation and selection.

Approved By LA [Signature] 4/8/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV [Signature] 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization.) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-1 cont'd

Req. cont'd

with these instructions, procedures . . ." (2) Para. 7.1 states in part:

"Measures shall be established to ensure that purchased material, equipment and services conform to the procurement documents. These measures shall include provisions, as appropriate, for source evaluation and selection . . ."



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-02  
6/85

(To be used for all AFSs with added sheets as required.)

Audit Finding No. 862a-2 Audited Checklist Reference USGS QMP-8.01 Rev. 0 Para. 4.1.1

Audited Organization USGS - Denver

Organization Unit Metrology Lab  
Rock Preparation Room Activity Identification & Control of Samples

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) S. Singer

Requirement (Cite) NNWSI-USGS-OMP 8.01 Rev. 0 Section 1. Identification & Control of Geologic & Hydrologic Samples, Para. 1 Purpose, states: "This procedure defines the method of identification and control of geologic and hydrologic samples to (cont'd)

Finding Contrary to the above J-13 water sample was found in a container which had no identification other than the number J-13. When the engineer was asked for any other documents that were traceable to the sample, his reply was, "These documents are not available."

Approved By LA S. Singer 4/12/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV James Blaylock 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-2 cont'd

Req. cont'd

assure their traceability until they are destroyed." Para. 2 Scope of Compliance, states in part: "This procedure is applicable to all geologic and hydrologic samples generated by USGS which support Quality Levels I and II activities for NNWSI Project." Para. 4.1. "Information needed for each sample will include its location, sampling plan, lot or batch, collector, date of collection, storage location and physical description. This data shall be on documents traceable to the sample throughout the samples' collection preparation, analysis and storage."



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-0  
6/85

(To be used for all AFSs with added sheets as required.)

Audit Finding No. 862a-3 Audited Checklist Reference 862a-1-4.2.2

Audited Organization USGS - Denver

Organization Unit QA Activity Procurement Doc. Control

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) N. Voltura/S. Singer

Requirement (Cite) NNWSI-USGS-QMP-4.01, Rev. 0 states: Para. 1: Purpose: "To establish controls for ensuring that requisition documents include the applicable statements, references or clauses to obtain procurement objectives for NNWSI Project related (cont'd)

Finding Contrary to the above, a sample review of procurement documents identified inconsistent implementation of USGS-QMP-4.01 in the following areas: (1) neither the purchase requisition nor the NNWSI QA Procurement Form consistently identify any of the following for QA Level I items or services: technical requirements, QA Program (cont'

Approved By LA S. Singer 4/8/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV Jan Blaylock 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization.) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-3 cont'd

Req. cont'd

services, activities or items." Para. 4.3 states in part: "Level I items/services -- In addition to 4.1 and 4.2, requisition documents shall include provisions as deemed necessary and applicable by the purchaser for the following: Technical requirements . . . , QA Program requirements . . . , Rights of Access . . . , Documentation Requirements . . . , Nonconformance reporting requirements . . ."

Para. 5.3 "QA Manager reviews & approves the requisition & QA Procurement forms . . . . Copies of the requisition documents for Level I items/services are forwarded to . . . WMPO . . ."

Finding cont'd

requirements, Rights of access, Documentation requirements, provisions for reporting nonconformances. Requisition #s - 4810-0116, 1/14/86; 4810-0041-86, 10/1/85; 4810-0109-86, 1/8/86; 4810-33310T, 12/27/85; 4810-0088, 12/17/85. (2) Lack of documented evidence of USGS' QA Manager's review and approval of the requisition and the QA Procurement form. Requisition #4810-0017-86, 9/18/85; #4810-0015-86, 8/20/85; #4810-0007-86, 8/85. (3) USGS personnel have approved the USGS NNWSI QA Procurement form for the USGS QA Manager without documented authority to do so. (4) Copies of all as-issued QA Level I procurement documents are not being forwarded to WMPO.



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-02  
6/85

(To be used for all AFSs with added sheets as required.)

Audit Finding No. 862a-4 Audited Checklist Reference 862a-18.2.1.2

Audited Organization USGS - Denver

Organization Unit QA Activity Audits

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) N. Voltura/S. Singer

Requirement (Cite) NNWSI SOP-02-01, Rev.0 Para. 18.2.1 states in part: "Internal & external audits shall be scheduled in a manner that shall provide coverage & coordination with ongoing QA program activities..." Para. 18.2.1.2 External Audits - Elements (cont'd)

Finding Contrary to the above, NNWSI-USGS-QMP-18.01, Rev. 0 does not address program provisions for conducting external audits of suppliers/contractors to USGS.

Approved By LA S. Singer 4/7/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV Jane Blaylock 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization.) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-4 cont'd

Req. cont'd

of a supplier's QA program shall be audited by the purchaser . . ."



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-0  
6/85

(To be used for all AFSs with added sheets as required)

QMP-12.01 para 3  
through 9 & SOP-0  
page 37 & 38 - of  
para 12.1.4

Audit Finding No. 862a-5

Audited Checklist Reference

Audited Organization USGS - Denver

Organization Unit Rock Properties  
Measurements Lab

Activity Control of M & TE

Response Assigned To W. W. Dudley, Jr.

Reported By (Auditor) S. Singer

Requirement (Cite) Chapter 12 Control of Measuring and Test Equipment Section 1, 2. SCOF

OF COMPLIANCE. This procedure applies to all USGS instruments that require calibration

in support of the NNWSI Project. It applies to all NNWSI-USGS personnel and their (con

Finding A review of the Rock Properties Measurement Lab revealed lack of compliance/imp

mentation in the following areas: (1) the QA Calibration Form is not being completed f

each instrument requiring calibration and is not being sent to the USGS QA Office pric

to the instrument's use. (2) The USGS QA Office is not entering this information (cont

Approved By LA S. Singer 4/2/86

Response Due Date 30 days after  
Receipt of  
Report

Approved By WMPO/NV James Bleylock 4/10/86

Date

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-5 cont'd Req. cont'd

contractors. 4. RESPONSIBILITIES. 4.1 The

Principal Investigator (PI) is responsible for ensuring that USGS-controlled instruments requiring calibration meet the requirements of this procedure.

5. PROCEDURE. 5.1 A QA Calibration Form (Attachment 1) shall be completed by the PI or a delegate for each instrument requiring calibration and sent to the

USGS QA Office prior to the instrument's use. 5.2 The USGS QA Office shall enter the information into a calibration system, and provide the originating

PI a copy of the information. 5.5 The PI is responsible for ensuring that the calibration status of instruments are displayed at some readily accessible

location. To comply, a sticker shall be affixed to each instrument denoting the calibration status according to one of the following three categories:

1. Showing equipment identification, date calibrated, date recalibration is due, procedure number and calibrator. 2. Indicating the equipment identification, "OPERATOR TO CALIBRATE", and the procedure number. 3. Showing the equipment

identification and "NO CALIBRATION REQUIRED". 5.6 Nonconformance reports shall be prepared in accordance with NNWSI-USGS-QMP-15.01 for instruments that are used after the recalibration due date or displays no calibration status sticker.

6. QA REQUIREMENTS. 6.1 Personnel performing equipment calibration shall be certified to have the qualifications necessary to perform the required cali-

bration. These qualifications shall be based on training and experience and documented according to procedure NNWSI-USGS-QMP-2.03. 6.2 Calibration

standards used for calibration of instruments shall be traceable to the National Bureau of Standards (NBS) or other known standards; this includes primary and working standards. If NBS standards do not exist, the reference standard used shall be supported by certificates, reports, or data sheets attesting to the

WMPO Audit Finding No. 862a-5 cont'd

Req. cont'd

date, accuracy, and conditions under which the results were obtained. If reference standards are used, they will be stored and handled in such a way as to maintain the required accuracy and characteristics of the standard.

6.3 The method and interval of calibration for each item shall be defined, based on the type of equipment stability, characteristics, required accuracy, intended use, the manufacturer's recommendations, and other conditions that affect measurement control. Instruments that are out of calibration shall be tagged or segregated and shall not be used until they have been recalibrated. If any instrument is found to be out of calibration consistently, then it shall be repaired or replaced. A calibration shall be performed when the accuracy of the instrument is suspect. 8. RECORDS MANAGEMENT. The calibration forms and any other documents associated with this procedure which are Quality Level I or II documents shall be processed as an official NNWSI QA record.

WMPO Audit Finding No. 862a-5 cont'd

Finding cont'd

into a calibration system -- to include all affected instruments. (3) The calibration status of instruments is not being displayed at a readily accessible location. Stickers are not affixed to each instrument denoting the calibration status in accordance with Para. 5.5 above. (4) Nonconformance reports have not been written for instruments that display no calibration status sticker. (5) No documented certifications are on file for personnel performing equipment calibrations. (6) Calibration standards used for calibration of instruments are not traceable to the NBS or other known standards. Where NBS standards do not exist, the reference standard is not supported by certificates, reports or data sheets attesting to the date, accuracy and conditions under which the results were obtained. (7) The method and interval of calibration for each item has not been defined, based on the type of equipment stability, characteristics, required accuracy, intended use, manufacturer's recommendations or other conditions that affect measurement controls. (8) Instruments out of calibration are not tagged or segregated. (9) Calibration forms, which are QA Level I or II documents, are not processed as NNWSI QA records.



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-0  
6/85

(To be used for all AFSs with added sheets as required)

Audit Finding No. 862a-6 Audited Checklist Reference 862a-1 Page 7 of

Audited Organization USGS

Organization Unit Various Activity Indoctrination & Training

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) J. W. Estella

Requirement (Cite) NNWSI-USGS-QMP-2.02, Rev. 0, paragraph 4.1 requires that all personnel performing quality related activities receive indoctrination and training to the extent necessary to perform their specific functions. Paragraph 4.2 states that the (cont'd)

Finding Contrary to the above cited requirement, there is no documentation of indoctrination and training of USGS personnel performing quality related activities. It should also be noted that there is no apparent central control or accountability of the USGS personnel working on the NNWSI Project to ensure that these personnel are (cont'd)

Approved By LA [Signature] 4/8/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV [Signature] 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory  
 Reviewed by LA/Date \_\_\_\_\_  
 Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory  
 Reviewed by LA/Date \_\_\_\_\_  
 Reviewed by WMPO/NV/Date \_\_\_\_\_  
 Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-6 cont'd

Req. cont'd

indoctrination and training activities shall be documented and retained as a QA record.

Finding cont'd

properly indoctrinated, trained, and certified.



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-C  
6/85

(To be used for all AFSs with added sheets as required)

Audit Finding No. 862a-7 Audited Checklist Reference 862a-1 pg 10 of

Audited Organization USGS

Organization Unit Various Activity Personnel Certifications

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) J. W. Estella

Requirement (Cite) NNWSI-SOP-02-01, Rev. 0 requires that personnel performing Quality Level I activities be certified to show competence to perform their specific duties, e.g. design verification, document review, surveillance, etc.

Finding Contrary to the above cited requirement, there are no certifications of personnel who perform reviews of technical documents. In addition, many of the USGS technical personnel certifications do not define the area of responsibility for which these personnel are certified. Examples are: Edwardo A. Rodriguez, David A. Ponce, (cont'd)

Approved By LA A. B. Suigas 4/8/86 Response Due Date 30 days aft. Receipt of Report

Approved By WMPO/NV Jens Blyskal 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-7 cont'd

Finding cont'd

Gary D. Hamilton, John H. Healy, Robert J. Munroe, Brennen O'Neill, William H. Prescott, Joann M. Stock, Joseph F. Svitek, Walter E. Wendt, Robert H. Colburn, Edward E. Criley, Ronald M. Kaderabek, Jeff Wilson, Dean Whitman. In some instances, the work experience included on the certifications of USGS technical personnel does not support the activities which they are certified to perform. Examples are: Susan Shipley, Paul E. Carrara, Richard Hay, Pamela Jenks, Christine Arthur, Michael Chornak, Ibrahim Palaz. Also, the certifications of Robert O. Castle and Kenneth A. Sargent were not approved by the next higher supervisory level as required by USGS procedure NNWSI-USGS-QMP-2.03, Rev. 0, paragraph 3.2; these certifications had no approvals at all. It should be noted that all the personnel certifications available for USGS technical personnel were completed within the 2 weeks prior to this audit. It should also be noted that the USGS QA program does not establish certification criteria for the USGS technical personnel. The basis for certification as described on the USGS certification form is subjective in nature. This also applies to the certification of Fenix and Scisson geologists who implement USGS activities. In addition, there are no provisions in the USGS QA program for USGS to either accept or concur with these certifications since these certifications are performed by F&S personnel.



# WMPO AUDIT FINDING SHEET (AFS)

(To be used for all AFSs with added sheets as required)

862a-1, pg 1 of 1

Audit Finding No. 862a-8 Audited Checklist Reference Ques. (1)

Audited Organization USGS

Organization Unit QA Activity I Organization

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) R.F. Cote/J.W. Estella

Requirement (Cite) NV0-196-17-Rev. 3, pg. 8, para. 1.8, states in part: quality assurance

personnel shall report to management levels such that they have sufficient authority a

organizational independence to identify quality problems; to initiate, recommend (con

Finding Contrary to the above requirements the USGS QA program does not adequately

address provisions for USGS QA personnel and QA support contractors to stop unsatisfac

tory work. Although USGS-NNWSI-QMP-10.01,RO, para. 4.4 does address that the QA manag

has authority to stop work during course of a surveillance, it is not documented (cont

Approved By LA *L. Sanchez* 4/7/86 Response Due Date 30 days after

Approved By WMPO/NV *James Blyford* 4/10/86 Date Receipt of Report

Response (To be completed by audited organization) \_\_\_\_\_

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Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

\_\_\_\_\_

WMPO Audit Finding No. 862a-8 cont'd

Req. cont'd

or provide solutions; to verify implementation of solutions; and to stop unsatisfactory work.

Finding cont'd

as to how this activity is implemented. It should be noted that the stop work authority appears to be limited to those activities identified during the surveillance. No apparent provisions exist to stop unsatisfactory work identified during audits, inspections or by other means.



# WMPO AUDIT FINDING SHEET (AFS)

(To be used for all AFSs with added sheets as required.)

862a, pg 2 of 102

Audit Finding No. 862a-9

Audited Checklist Reference of 102, Ques. 2, 3, 4a; p 7,

Audited Organization USGS

Organization Unit QA

Activity Organization (I)

Response Assigned To W. W. Dudley, Jr.

Reported By (Auditor) R.F. Cote/J.W. Estella

Requirement (Cite) NNWSI-SOP-02-01-Rev. 0, Sec. 1.0, para. 1.2.4 organization states: "I more than one organization is involved in the execution of activities affecting quality then the responsibility & authority of each organization shall be established (cont'd)

Finding Contrary to the above requirements, the USGS QAPP-Rev. 0, Sec. QMP-1.0 does not delineate in writing the responsibility & authority of each organization involved in the execution of activities affecting quality, and does not address external and internal interfaces between organizational units. In the case of internal interfaces, (cont'd)

Approved By LA A. Shugis 4/9/86

Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV James Blaylock 4/10/86

Date \_\_\_\_\_

Response (To be completed by audited organization.) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-9 cont'd

Req. cont'd

clearly and documented. The external interfaces between organizations and the internal interfaces between organizational units and changes thereto shall be documented. Interface responsibilities shall be defined and documented."

NNWSI-SOP-02-01-Rev. 0, Par. 1.1.1; Organization, states in part . . . the authority and duties of persons and organizations performing activities affecting quality shall be clearly established and delineated in writing.

Finding cont'd

the Geological Division QA Specialist Central & QA Specialist Western Division, and Nuclear Hydrology QA Specialist responsibilities and authorities are not defined and documented. The aforementioned QA personnel as depicted in the USGS Organization Chart do not appear to have access to management levels such that they have the required organizational freedom including sufficient independence from cost and schedule when opposed to safety considerations. Note: see AFS-86-2A-1. Additionally, the USGS QA organization does not clearly delineate in writing the authority and responsibility for the external interfaces between organizational units performing activities affecting quality e.g. Los Alamos National Laboratory who is performing internal and external audits for the USGS and the Bureau of Reclamation who is performing site characterization activities including, but not limited to, surface hydrology.



# WMPO AUDIT FINDING SHEET (AFS)

(To be used for all AFSs with added sheets as required)

862a-1, pg 3 of 10

Audit Finding No. 862a-10

Audited Checklist Reference Ques. 5.

Audited Organization USGS

Organization Unit QA

Activity II Program

Response Assigned To W. W. Dudley, Jr.

Reported By (Auditor) R.F. Cote/J.W. Estella

Requirement (Cite) NNWSI-SOP-02-01-Rev. 0, Sec. 2.0, Par. 2.1.1; Program; states in part. the program shall identify the systems, structures, components, and activities to be covered by the QA Program Plan.

Finding Contrary to the above requirement; the USGS QAPP, Rev. 2 does not address provisions for the Quality Assurance program to control activities associated with operation of the core library facilities at the NTS for handling, storing, and distributing material samples and core for the commercial nuclear waste management activities (cont

Approved By LA

Stephen J. 4/8/86

Response Due Date

30 days after  
Receipt of  
Report

Approved By WMPO/NV

James Blaylock 4/10/86

Date

Response (To be completed by audited organization.)

Implementation Date

Submitted By

Date

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response

Satisfactory  Unsatisfactory

Reviewed by LA/Date

Reviewed by WMPO/NV/Date

Corrective Action Implementation

Satisfactory  Unsatisfactory

Reviewed by LA/Date

Reviewed by WMPO/NV/Date

Reaudit Date

Remarks

Audit Finding Closed

LA Concurrence/Date

Reference and Number(s) for unsatisfactory reaudit

WMPO Audit Finding No. 862a-10 cont'd

Finding cont'd

at the NTS as required by the NNWSI Quality Assurance Plan. Note: refer to AFS-86-2A-11 for additional information.



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-6/85

(To be used for all AFSs with added sheets as required)

862a-1, pg 45 of 102 Ques. (3) and 60 of 102 Ques. (

Audit Finding No. 862a-11 Audited Checklist Reference

Audited Organization USGS

Organization Unit QA Activity (13) Storage Handling & Shipping

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) R.F. Cote/J.W. Estella

Requirement (Cite) Req. No. 1 NVO-196-17-Rev. 3, Sec. 5.0, par. 5.1, states in part all activities affecting quality on the NNWSI project will be performed utilizing approve instructions, procedures, drawings, or other documents. . (cont'd)

Finding Contrary to the above requirement; the USGS Quality Assurance program does not maintain WMPO approved QA administrative procedures for the storage handling & shipping of core samples and other materials associated with NNWSI activities to preclude damage loss, or deterioration by environmental conditions. This condition is of (cont'd)

Approved By LA S. Svinger 4/19/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV James Blaylock 4/10/86 Date

Response (To be completed by audited organization)

Implementation Date Submitted By Date

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response

Satisfactory  Unsatisfactory

Reviewed by LA/Date

Reviewed by WMPO/NV/Date

Corrective Action Implementation

Satisfactory  Unsatisfactory

Reviewed by LA/Date

Reviewed by WMPO/NV/Date

Reaudit Date

Remarks

Audit Finding Closed  LA Concurrence/Date

Reference and Number(s) for unsatisfactory reaudit

WMPO Audit Finding No. 862a-11 cont'd

Req. cont'd

Req. No. 2 NVO-196-17-Rev. 3, Sec. 5.0, Par. 5.1, states: QA administrative procedures or documents provide instructions for implementation and application of NVO-196-17 and the participating organizations' . . . QAPPs. Req. No. 3 NVO-196-17-Rev. 3, Sec. 5.0, Par. 5.3, states in part: the administrative QA procedures will require WMPO review and approval prior to use.

Finding cont'd

particular concern since the USGS is responsible in part for the operation of the core library facilities at the NTS including, handling, storing, and distributing material samples and core for the commercial nuclear waste management activities at the NTS. Note: refer to AFS 86-2A-10 for additional information.



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-C  
6/85

(To be used for all AFSs with added sheets as required.)

Audit Finding No. 862a-12 Audited Checklist Reference 862a-1, pg 44 of 102 Ques.(1) and

Audited Organization USGS

Organization Unit QA Activity (9) Control of Processes

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) R.F. Cote/J.W. Estelle

Requirement (Cite) Req. No. 1 NVO-196-17-Rev. 3, Sec. 9.0, Par. 9.2; states; when special processes are required to control quality, the use of qualified personnel, equipment,

procedures is necessary, the criteria for qualification of personnel, equipment, (cont'd

Finding Contrary to the above requirement(s), the USGS Quality Assurance Plan does not

address provisions to be established for the qualification of personnel, equipment, an

procedures and for the control of special process verification methods to be documente

for core sample preparation. This condition is of particular concern since the (cont'd

Approved By LA *A. Lewis* 4/7/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV *James Blylock* 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization.) \_\_\_\_\_

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Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response Reviewed by LA/Date \_\_\_\_\_

Satisfactory  Unsatisfactory Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation Reviewed by LA/Date \_\_\_\_\_

Satisfactory  Unsatisfactory Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

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Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

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WMPO Audit Finding No. 862a-12 cont'd

Req. cont'd

and procedures, and the maintenance of the qualification records will be specified in the participating organizations' and NTS support contractors' QA programs. Special process verification methods and criteria will also be documented and retained. Req. No. 2 NVO-196-17-Rev. 3, Sec. 9.0, Par. 9.3; states in part . . . examples of special processes include, but are not limited to . . . core sample preparation. Req. No. 3 NVO-196-17-Rev. 3, Sec. 9.0, Par. 9.4; states; for QA Level I activities, the participating organizations and NTS support contractors will forward their special process procedures to WMPO for review and approval prior to use.

Finding cont'd

USGS has and is presently processing core samples for NNWSI activities prior to the development review and approval by WMPO of these special process procedures.



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-024  
6/85

(To be used for all AFSs with added sheets as required.)

Audit Finding No. 862a-13 Audited Checklist Reference 86-2a, pages 6, 8, 9, 11, 13-15.

Audited Organization U.S. Geological Survey - Denver

Organization Unit Geologic/Hydrologic Divs. Activity Quality Assurance Records Peer-Review Documentation

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) Ed Oakes

Requirement (Cite) (Part 1) NNWSI 196-17, Rev. 0 (1980), Sec. 17, Para. 17.1 and USGS-QAPP-01 R0, Sec. 17 states that sufficient records, including the results of technical reviews, will be maintained to support conclusions reached from investigations, (cont'

Finding (Part 1) Many of the publication files requested for review did not contain peer review comments. In several publication files that did contain peer-review comments, resolution of the comments by the author(s) was unclear. (Part 2) WMPO asked several interviewees to produce the written peer-review procedures in effect prior to (cont'd)

Approved By LA *L. King* 4/8/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV *James Blaylock* 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization.) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response Reviewed by LA/Date \_\_\_\_\_

Satisfactory  Unsatisfactory Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation Reviewed by LA/Date \_\_\_\_\_

Satisfactory  Unsatisfactory Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-13 cont'd

Req. cont'd

and (Part 2) NNWSI 196-17 Rev. 0 (1980), Sec. 6, Para. 6.1. states that each participating organization have existing written procedures which describe how They control their own quality-related documents.

Finding cont'd

NNWSI-USGS-QMP-3.04, Rev. 0; evidence that these procedures existed was not produced.



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-  
6/85

(To be used for all AFSs with added sheets as required.)

862a-2, pg 3

Audit Finding No. 862a-14

Audited Checklist Reference #3 & #6

Audited Organization USGS - Denver

Organization Unit Site Investigation Activity Documentation

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) Forrest D. Peters

Requirement (Cite) NVO 196-17 Rev. 3 Para. 3.2.2 and 3.2.3 3.2.2 Prior to the start of site investigation, the responsible Participating Organization shall develop a plan which will describe the tests and experiments which will be utilized to determine the (cont'd)

Finding The USGS has been and is performing numerous site investigations for the NNWSI project, as listed in The Work Breakdown Structure Dictionary, without any approved site investigation plans, and therefore, has been and is violating the requirements of the referred paragraphs. The referred paragraphs clearly prohibit any site (cont'd)

Approved By LA A. Sanchez 4/8/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV Jane Blaylock 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory  
 Reviewed by LA/Date \_\_\_\_\_  
 Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory  
 Reviewed by LA/Date \_\_\_\_\_  
 Reviewed by WMPO/NV/Date \_\_\_\_\_  
 Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-14 cont'd

Req. cont'd

geologic, hydrologic, geotechnical, or tectonic mean values and range of uncertainties of the natural host formation. The plan shall present sufficient detail to determine whether or not the activities to be conducted, the methods of analyzing the data to be gathered, and the modeling methods will ensure that the end results will provide sufficient information necessary to evaluate the characteristics of the natural barriers against the criteria specified in 10 CFR 191.3.2.3 The responsible Participating Organization shall conduct a technical review on the plan prior to the start of any activities associated with the plan.

Finding cont'd

investigations from being performed, until and unless, a site investigation plan has been prepared, technically reviewed, and approved by WMPO.

It is true that extensive plans are in existence, or are in preparation, for the site characterization plan (SCP) and the exploratory shaft test plan (ESTP), but these plans are not in effect at this time. The USGS has generally failed to provide, or to technically review, site investigation plans for their activities within the site exploration phase of this project.

It is also true that the USGS did prepare a Work Plan for the USGS Participation in the Nevada Nuclear Waste Storage Investigation, for the fiscal year 1985 activities, but this was apparently a preliminary draft which was never completed, reviewed, or submitted to WMPO for approval. A similar document was also prepared for the fiscal year 1986, but again, this was also apparently a preliminary draft which has not yet been completed, reviewed, or submitted to WMPO for approval. These documents do not therefore, fulfill the requirements of NVO 196-17 Para 3.2.2 and 3.2.3.

(See Audit Finding 862a-15.)



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-02  
6/85

(To be used for all AFSs with added sheets as required)

862a-2 pg. 3

Audit Finding No. 862a-15 Audited Checklist Reference #4 & #6

Audited Organization USGS - Denver

Organization Unit QA Activity Preparation of USGS QAPP

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) Forrest D. Peters

Requirement (Cite) NVO 196-17 Rev. 3 Para. 2.1, 3.2.2, and 3.2.3. SOP 02-01 Para. 2.1.2

The QAPPs shall provide for the planning and accomplishment of activities affecting quality under suitable controlled conditions. Controlled conditions include the (cont'

Finding The USGS QAPP does not provide for the planning of the site investigation activities affecting quality as required by (Para. 2.1) of NVO 196-17 Rev. 3, as further amplified in Para. 2.1.2 of SOP 02-01 Rev. 0, and Para. 3.2.2. and 3.2.3 of NVO 196-17 Rev. 3.

Approved By LA A. Lueder 4/8/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV James Blaylock 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 86-2a-15 cont'd

Req. cont'd

use of appropriate equipment, suitable environmental conditions for accomplishing the activity, assurance that prerequisites for the given activity have been satisfied, and control for verification of quality activities. SOP 02-01 2.1.2 Activities that affect quality should be planned and documented to assure a systematic approach. Planning should result in the documented identification of methods and organizational responsibilities. Planning should be performed as early as practical and no later than the start of those activities that are to be controlled to assure interface compatibility and a satisfactory approach to QA. NVO 196-17 3.2.2 Prior to the start of a site investigation, the responsible Participating Organization shall develop a plan which will describe the tests and experiments which will be utilized to determine the geologic, hydrologic, geotechnical, or tectonic mean values and range of uncertainties of the natural host formation. The plan shall present sufficient detail to determine whether or not the activities to be conducted, the methods of analyzing the data to be gathered, and the modeling methods will ensure that the end results will provide sufficient information necessary to evaluate the characteristics of the natural barriers against the criteria specified in 10 CFR 191. 3.2.3 The responsible Participating Organization shall conduct a technical review on the plan prior to the start of any activities associated with the plan.



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-6/85

(To be used for all AFSs with added sheets as required.)

Audit Finding No. 862a-16 Audited Checklist Reference (See note below)

Audited Organization USGS - Denver

Organization Unit QA Activity Supplier Evaluations/Certification of Personnel

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) N. Voltura/S. Singer

Requirement (Cite) SOP-02-01, Rev. 0 Para. 17.1.1 states: "Sufficient records shall be maintained to furnish evidence of activities that affect quality. The records shall include at least the following: . . . qualifications of personnel . . ."

Finding Contrary to the above, certifications of audit personnel who have performed supplier evaluations are not on file at USGS. Therefore, the acceptability of the supplier evaluations performed by these individuals cannot be determined.

Approved By LA S. Singer 4/8/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV Jane Blaylock 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory  
 Reviewed by LA/Date \_\_\_\_\_  
 Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory  
 Reviewed by LA/Date \_\_\_\_\_  
 Reviewed by WMPO/NV/Date \_\_\_\_\_  
 Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-C  
6/85

(To be used for all AFSs with added sheets as required.)

Audit Finding No. 862a-17 Audited Checklist Reference 862a-1, pg 4 of 102 Ques. 6.A, 6.

Audited Organization USGS

Organization Unit QA Activity Organization (I)

Response Assigned To W.W. Dudley, Jr. Reported By (Auditor) R.F. Cote/J.W. Estella

Requirement (Cite) NNWSI-USGS-QMP-1.01, RO. Pg. 5 of 5, Par. 4.10; states: "All support other contractors with activities directed at the NNWSI-USGS Project shall either comply with the requirements of the NNWSI-USGS QA Program Plan as specified by contract (cont'

Finding Contrary to the above requirement, USGS contracts with various support contract (e.g.) Inst. of Geophysics/Planetary Physics, Petrographic Services, Colorado School of Mines, and others do not specify that these contractors will implement the USGS QA Program for their activities nor does objective evidence exist to demonstrate (cont'd)

Approved By LA S. Sanchez 4/8/86 Response Due Date 30 days aft. Receipt of Report

Approved By WMPO/NV James Blanford 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory  
 Reviewed by LA/Date \_\_\_\_\_  
 Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory  
 Reviewed by LA/Date \_\_\_\_\_  
 Reviewed by WMPO/NV/Date \_\_\_\_\_  
 Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-17 cont'd

Req. cont'd

or they shall have an equivalent program of their own."

Finding cont'd

that these contractors have an equivalent program which meets the requirements of the NNWSI Project QA Plan.

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# WMPO AUDIT FINDING SHEET (AFS)

N-QA-  
6/85

(To be used for all AFSs with added sheets as required)

862a, pg 43 of 10

Audit Finding No. 862a-18

Audited Checklist Reference Ques. 7

Audited Organization USGS

Organization Unit QA

Activity Criteria (8)

Response Assigned To W. W. Dudley, Jr.

Reported By (Auditor) R.F. Cote/J.W. Estelle

Requirement (Cite) NNWSI-SOP-02-01-Rev. 0, Sec. 8.0, Par. 8.2.2.2, states: items or samples having limited calendar life, or items having limited operating life or cycles shall be identified and controlled to preclude use of items or samples for which (cont

Finding Contrary to the above requirements, the USGS QA program does not address provisions to control the utilization of limited calendar life items or samples (e.g.) water samples to assure that these items or samples are not used after such time that their chemical and physical properties may change which would affect the resulting data.

Approved By LA L. Singer 4/7/86

Response Due Date 30 days aft. Receipt of Report

Approved By WMPO/NV James Blyler 4/10/86

Date \_\_\_\_\_

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-18 cont'd

Req. cont'd

the shelf life or operating life has expired.



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-02-6/85

(To be used for all AFSs with added sheets as required.)

Audit Finding No. 862a-19 Audited Checklist Reference 862a-1 pg.43 of 1

Audited Organization USGS

Organization Unit Quality Assurance Activity Identification and Control of Materials, Parts & Components

Response Assigned To \_\_\_\_\_ Reported By (Auditor) J. W. Estella

Requirement (Cite) NNWSI-USGS-QMP-8.01, Rev. 0, paragraph 3 requires the identification geologic and hydrologic samples to be controlled from initial collection through disposal and that this identification be correlated from the sample to (cont'd)

Finding Contrary to the above cited requirement, there is no objective evidence to support that the required QA Manager review is being performed. In addition there are no provisions in the USGS technical procedures to require that this sample documentation be provided to the USGS QA Manager for review.

Approved By LA [Signature] 4/9/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV James Blaylock 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response Reviewed by LA/Date \_\_\_\_\_

Satisfactory  Unsatisfactory Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation Reviewed by LA/Date \_\_\_\_\_

Satisfactory  Unsatisfactory Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-19 cont'd

Req. cont'd

pertinent documents. Paragraph 5 of this procedure requires that once the sample has undergone all tests and analyses, the sample documents must be reviewed for completeness and adequacy by the QA Manager. This review must be documented by signature of the QA Manager.



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-02.  
6/85

(To be used for all AFSs with added sheets as required)

Audit Finding No. 862a-20 Audited Checklist Reference 862a, pg. 72, Ques. (1)

Audited Organization U.S. Geological Survey - Denver

Organization Unit Record Processing Center Activity Quality Assurance Records

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) Ed Oakes

Requirement (Cite) NNWSI-SOP-02-01 (RO), Sec. 17, Para. 17.1.1 requires that specific records be maintained in the USGS's "Record Processing Center."

Finding Copies of some required records, such as audits and reviews of technical publications, are neither identifiable or retrievable.

Approved By LA S. Lutzler 4/8/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV James Blaylock 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response

Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation

Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-02  
6/85

(To be used for all AFSs with added sheets as required.)

Audit Finding No. 862a-21 Audited Checklist Reference Page 82 of 102

Audited Organization USGS - Denver

Organization Unit Records Processing Center Activity QA Records

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) Ed Oakes

Requirement (Cite) SOP-02-01, Rev. 0 (1) Para. 5.1.1 states in part: "Activities that affect quality shall be prescribed in documented instructions, procedures . . . of a type appropriate to the circumstances . . ." Para. 5.3.1 states in part: (cont'd)

Finding (1) Contrary to requirements 1 & 2 above, USGS records are being processed/reviewed using an unapproved QA procedure - "QA Records Management Guidelines" dated 1/28/86. (2) Contrary to requirement 3 above, measures have not been established to identify/document those personnel who are authorized to validate records.

Approved By LA [Signature] 4/9/86 Response Due Date 30 days after Receipt of

Approved By WMPO/NV [Signature] 4/10/86 Date Report

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory

Reviewed by LA/Date \_\_\_\_\_

Reviewed by WMPO/NV/Date \_\_\_\_\_

Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-21 cont'd

Req. cont'd

". . . QA administrative documents for Level I shall be approved by WMPO before they can be used." (2) USGS-QMP-17.01, Para. 4.3 states in part: "The Records Administrator is responsible for management and implementation of the USGS records management system. This includes instituting a program to review potential QA records to ensure their completeness, suitability and legibility, and for retention processing. The Administrator will also be responsible for receipt control, indexing and submittal to the PRC." (3) USGS-QMP-17.01, Para. 5.5 states in part: "All documents, including controlled documents, are to be stamped, initialed, or signed and dated by authorized personnel, or otherwise authenticated, appropriate to the class of the documents . . ."



# WMPO AUDIT FINDING SHEET (AFS)

N-QA-02  
6/85

(To be used for all AFSs with added sheets as required.)

Audit Finding No. 862a-22 Audited Checklist Reference 862a-16.5.1

Audited Organization USGS - Denver

Organization Unit QA Activity NCR, CAR and Audit Procedures

Response Assigned To W. W. Dudley, Jr. Reported By (Auditor) N. Voltura/S. Singer

Requirement (Cite) NNWSI-USGS-QMP-16.01, Rev. 0 Para. 5.1 states in part: ". . . Periodic examination of Nonconformance Reports, Audit Reports, or other documents often reveal the need for a CAR, but a CAR also may be issued as a result of any observation (cont'

Finding Contrary to the above, no documentation, USGS CAR, has been generated to identify numerous recurring conditions adverse to quality. There are 29 outstanding/open audit findings identified by LANL for USGS which have not been resolved; many of these identify recurring conditions.

Approved By LA S. Singer 4/7/86 Response Due Date 30 days after Receipt of Report

Approved By WMPO/NV James Blaylock 4/10/86 Date \_\_\_\_\_

Response (To be completed by audited organization) \_\_\_\_\_

Implementation Date \_\_\_\_\_ Submitted By \_\_\_\_\_ Date \_\_\_\_\_

To be completed by lead auditor (LA) and reviewed by WMPO/NV

Corrective Action Response  
 Satisfactory  Unsatisfactory  
 Reviewed by LA/Date \_\_\_\_\_  
 Reviewed by WMPO/NV/Date \_\_\_\_\_

Corrective Action Implementation  
 Satisfactory  Unsatisfactory  
 Reviewed by LA/Date \_\_\_\_\_  
 Reviewed by WMPO/NV/Date \_\_\_\_\_  
 Reaudit Date \_\_\_\_\_

Remarks \_\_\_\_\_

Audit Finding Closed  LA Concurrence/Date \_\_\_\_\_

Reference and Number(s) for unsatisfactory reaudit \_\_\_\_\_

WMPO Audit Finding No. 862a-22 cont'd

Req. cont'd

which discloses a ". . . recurring adverse situation or condition."

# ENCLOSURE 6

## Report of OGR Participation in WMPO QA Audit of USGS - Denver

Auditing Organization: Waste Management Project Office,  
Nevada Operations Office

Audited Organization: United States Geological Survey, Denver

Dates of Audit: March 11 - 14, 1986

Audit Scope: (1) Programmatic (all 18 criteria)  
(2) Technical (Selected technical reports supporting EA)

Audit Team Members: Sam Singer, SAIC (Lead Auditor)  
Nancy Voltura, SAIC (Auditor)  
John Estella, SAIC (Auditor)  
Ron Cote, SAIC (Auditor in Training)  
Forest Peters, SAIC (Auditor in Training)  
Ed Oakes, SAIC (Technical Advisor)  
Carl Newton, DOE-HQ (Auditor in Training)  
Paul Prestholt, NRC-HQ (Observer)  
Susan Billhorn, NRC-HQ (Observer)

### Summary of Audit:

The audit was divided into three teams. The first team, led by Sam Singer, conducted a programmatic audit of criteria 4, 6, 7, 12, 15, 16 and 18. John Estella led a second team in a programmatic audit of criteria 1, 2, 8, 9, 10, 13 and 14. The second team was also responsible for verification of corrective action taken in response to the findings from the previous audit (#85-12). A third team led by Ed Oakes conducted a technical audit in which selected reports referenced in the Environmental Assessment were reviewed for adequacy. The third team also examined criteria 3, 5, 11, and 17 and some selected test procedures.

At the end of the second day of the audit it was apparent to all audit team members that the USGS work was not being controlled by the QA program and that significant problems adverse to quality were prevalent. The team unanimously voted to recommend to the WMPO project manager that he stop work at USGS until the significant problems were corrected.

At the exit meeting the Audit Team Leader reviewed the 25 expected findings from the audit. The most serious, in my opinion, are:

1. The lack of an indoctrination and training program which has led to an ignorance among USGS personnel of quality requirements, such as instrument calibration and the conduct of peer reviews, and an apathy by management and workers toward documentation of quality achievement.
2. The lack of detailed site investigation plans describing the work that USGS proposes to do for WMPO over the next year.
3. The failure to clearly delineate authority and responsibility within the USGS organization and between USGS and other participants, such as the Bureau of Reclamation.
4. The lack of assigned quality levels to the work activities being performed.

Evaluation of Conduct of Audit:

The audit checklist was excellent. The questions were well thought out and thorough. No important areas seemed to have been overlooked and the questions were phrased in such a manner that they were readily understandable by both auditor and auditee.

The pre-audit meeting for the audit team was a very good idea and well handled. The conduct and scope of the audit, and use of the checklist was explained well. I also think the daily team meetings after each day's activities were invaluable.

The audit team leader and members were very professional in their conduct of the audit. At the exit meeting one of the NRC observers said she had never seen a team so well prepared. I concur.

Some areas that offer a potential for improvement in the future are:

- 1) An advance copy of the checklist to all team members would have been useful.
- 2) Some time set aside each day to discuss questions of the checklist would be useful - perhaps at the beginning of each day.

- 3) I was sorry to see only SAIC people - no DOE-WMPO representatives were on the audit (except at the exit meeting).
- 4) I was stunned by the "lack of respect" exhibited by the USGS management for the QA Audit - the team was told at the entrance meeting they would be prohibited from interviewing principal investigators because they were working on more important matters. This situation would probably not have been turned around except for the presence of DOE-HQ on the audit and some aggressive intervention.
- 5) The role of USGS observers was not discussed at either the pre-audit team meeting or the entrance meeting and probably should have been.
- 6) There was no schedule for interviews of USGS personnel by WMPO audit teams.
- 7) There was no briefing by USGS on their organization at the entrance meeting. Such a briefing would be helping in determining the responsibilities of those being interviewed in the audit and in how they relate to other departments in USGS.

FOR OCRWM DISTRIBUTION

SUBJECT: Report of WMPO Audit of USGS

ADDRESSEE: J. Knight

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L. Skoblar, Weston  
E. Sulek, Weston  
✓ J. Kennedy, NRC

RW-24:CNewton:KMA:252-5625:typed 4/1/86

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CONCURRENCES:

C. Newton 4/2/86  
C. Newton, RW-24



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 WASHINGTON, D. C. 20555

MAY 09 1986

MEMORANDUM FOR: G. Ted Ankrum, Chief  
 Quality Assurance Branch  
 Division of Quality Assurance, Vendor,  
 and Technical Training Center Programs  
 Office of Inspection and Enforcement

FROM: Craig G. Walenga  
 Quality Assurance Branch  
 Division of Quality Assurance, Vendor,  
 and Technical Training Center Programs  
 Office of Inspection and Enforcement

SUBJECT: REPORT OF OBSERVATIONS MADE DURING A DOE-SPONSORED AUDIT  
 OF THE KAISER ENGINEERS/PARSONS, BRINKERHOFF QUALITY  
 PROGRAM.

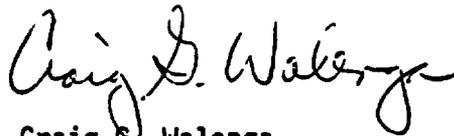
From April 15-17, 1986, I observed an audit conducted by Management Analysis Corporation (MAC) on behalf of the Department of Energy's Basalt Waste Isolation Project Office (BWIP) on the implementation of Raymond Kaiser Engineers/Parsons, Brinckerhoff, Quade and Douglas, Inc. (RKE/PB) quality assurance program. RKE/PB is designing the BWIP exploratory shaft and working on a repository conceptual design.

On March 19, 1986, DOE's BWIP project office at Richland informed RKE/PB that an audit of RKE/PB's "quality program as it relates to exploratory shaft design and repository design" would be conducted on April 15-18, 1986. In accordance with the NRC agreement with DOE/HQ, NMSS chose to observe the conduct of this audit and ask specifically for IE participation. This three-day audit was conducted by two MAC employees, a Rockwell quality engineer, and a DOE/HQ QA contractor.

Two objectives were identified for this observation. The first objective was to determine if the DOE-sponsored audit was capable of detecting whether or not the RKE/PB QA program was being effectively implemented. The second objective was to form an independent opinion about whether or not RKE/PB's quality program is being effectively implemented. As to the first objective, the observed audit was not capable of detecting whether or not the RKE/PB QA program was being effectively implemented. The second objective was more difficult to achieve because the NRC observer's role was simply that--observation, and there was little information from the DOE-sponsored audit from which a conclusion could be based. However, there appears to be the potential that RKE/PB may be unable to ensure that its engineering products can be demonstrated to have the required quality. Appendix A is a listing of observations and associated conclusions concerning the quality of the audit. Appendix B is a listing of observations and associated conclusions concerning the RKE/PB QA program. Appendix C is a listing of other observations that are pertinent to this audit.

By the time of the exit meeting, it appeared that a single quality audit finding would be issued concerning the lack of an approved procedure for the collection, storage, and maintenance of records and lack of a proper record storage facility. While portions of the RKE/PB QA program may be effectively implemented, the observed audit could not have substantiated this.

During the period August-November 1985, Rockwell allowed work to proceed using a "Work Around Plan," which was audited by Rockwell at the end of August 1985. Rockwell reviewed the new NQA-1-based QA program and allowed RKE/PB to implement the QA plan and procedures in November 1985. The observed audit apparently was the first DOE-sponsored audit of the NQA-1-based QA plan since its inception. Given the potential for weaknesses shown in the RKE/PB implementation of the QA program and the weakness in the DOE-sponsored audit, the ultimate usefulness of RKE/PB's work for licensing purposes is in question and will require further review.



Craig G. Walenga  
Quality Assurance Branch  
Division of Quality Assurance, Vendor, —  
and Technical Training Center Programs  
Office of Inspection and Enforcement

Enclosure:  
Appendices A, B, C

cc: B. K. Grimes, IE  
R. Browning, NMSS  
J. J. Linehan, NMSS  
J. Kennedy, NMSS  
D. Hedges, NMSS

## Appendix A

### Observations and associated conclusions concerning the quality of the audit.

1. The audit was poorly planned, did not appear to address itself to the stated objectives, and showed poor use of available time.
  - The audit checklists were finalized on the day prior to the audit entrance meeting.
  - RKE/PB contract requirements for quality assurance were not reviewed prior to the audit or used in the preparation of audit checklists. It was not apparent that the auditors were aware of RKE/PB's contractual commitments for quality assurance.
  - While the audit team leader indicated that he had reviewed a 1985 audit report on RKE/PB, he did not have the audit report with him during the current audit, had not shown it to the other team members, nor was it apparent that the prior audit had been used in the preparation of the audit checklist.
  - The audit plan was so brief as to be almost unusable as a planning document.
  - The audit team was unprepared for its role. Apparently, the primary basis of the audit was to be the Management Analysis Corporation's (MAC's) "Auditing for Effectiveness" program. The lead auditor was a MAC employee under contract to the BWIP prime contractor (Rockwell). No familiarization training was given to two of the four auditors who were not MAC employees. Neither of the two non-MAC team members were listed on the audit plan as auditors. Both expected to observe the audit, but found on the day of the audit, that one was to be an auditor and the other a technical specialist. None of the team members were aware of the scope of RKE/PB's current efforts and the audit team leader requested that RKE/PB present a 20-minute overview of BWIP work history and the RKE/PB QA program during the entrance meeting. Even after the presentation, the auditors required further briefing during the audit to clarify what work was being performed and under what QA program the work was being accomplished.
  - The audit scope was not adequate to achieve the stated objectives of the audit. The March 19, 1986 letter from DOE (RL) management stated that the "audit scope is implementation of RKE/PB quality program as it relates to Exploratory Shaft design and Repository design..." The audit plan appears to narrow the scope to the "audit of quality program elements for design control..." The audit team leader indicated at the entrance meeting that the scope of the audit was to be limited to the following program areas:

Organization	Document Control
Design Control	Test Control
Procurement Document Control	Corrective Action
Instructions, Procedures, and Drawings	Records Management

Based on discussions with the audit team leader, the decision to perform a more limited scope audit was made by a MAC employee and it was not apparent that this reduction was known to, reviewed, or approved by DOE--particularly since the audit checklists were not finalized until the day prior to the audit and no approvals were noted on the checklists.

- The audit was conducted over a three-day period. The first two days were not full workdays, and the third day was spent reviewing the previous two days' activities in preparation for a 3:00 PM exit meeting. A significant portion of the productive hours available was spent with the audit team being familiarized with RKE/PB QA program and procedures and in the annotation of their audit checklists.
2. The audit concentrated on superficial paperwork issues.
- There were no members of the team who were capable of evaluating the technical adequacy of work performed. The team member (Rockwell quality engineer), who was drafted by the audit team leader for the technical review of RKE/PB's activities, said that he was not technically competent to assess the calculation and design efforts, and indicated that his review would be limited to RKE/PB's procedural compliance.
  - The lack of technical review capability was readily apparent during an evaluation of design control. One checkprint being reviewed had numerous comments with apparent resolutions. One resolution documented on the checkprint for a number of individual comments was "I'm doing it to Rockwell input." When I questioned the auditor as to the adequacy of that response, or of any of the comment resolutions, he stated that the answer to that question "goes beyond the scope of a lowly auditor." His review was strictly for procedural compliance as he made no attempt to assess the adequacy or technical correctness of any comment resolution on the checkprint.
  - When some closed RKE/PB surveillance deficiency reports were found to have an incomplete "verification acceptable" block, the auditor randomly sampled the verification of five surveillance reports. The auditor then elected to verify that corrective action had been taken for deficiencies identified in the surveillance reports. The deficiencies for which corrective action was verified were:
    - (1) pagination errors in a calculation file.
    - (2) failure to have "findings and conclusions" section of a calculation file properly titled.
    - (3) failure to deliver back-up documents to the project files.
  - Despite the fact that vendor-supplied services and supplies are a recurrent QA problem area in NRC-licensed activities and that the RKE/PB employee who was handling procurement activities was newly assigned, the audit was accomplished with only an interview. There was no indepth guidance on the audit checklist and no attempt was made to review any RKE/PB surveillance reports or audits of their subcontractors.

- Despite the fact that RKE/PB had performed a corporate audit of its newly implemented NQA-1-based QA program in January 1986, the DOE-sponsored audit did not evaluate the corporate audit or check to see whether necessary corrective action was being taken on any corporate-identified deficiencies.
- Training was reviewed by discussing the training program with management, reviewing individual training course file folders, and reviewing the basic training form used to identify and document an individual's training. It was not apparent that any review of the adequacy, appropriateness or effectiveness of training was performed.
- The checklists were apparently drawn from MAC's bank of prepared checklists for an NQA-1 QA program, with no tailoring for the situation.

## Appendix B

### Observations and associated conclusions concerning the RKE/PB QA program.

1. It appears that RKE/PB may not have sufficient staff with appropriate QA expertise to assure that its engineering products can be demonstrated to have the required quality.
2. RKE/PB produced a letter showing that they had requested money from Rockwell to implement the records management and document control portion of RKE/PB's QA program. No response to their request had been given. It appears that the RKE/PB QA program is being implemented on a task-by-task basis with RKE/PB able to proceed with QA program implementation only when funds are provided by Rockwell.
3. RKE/PB QA apparently does not conduct audits. However, since the audit function was not within the truncated scope of the DOE-sponsored audit, this issue was not pursued by the audit team.
4. RKE/PB operates on a task-by-task basis with the prime contractor (Rockwell) and thus, is not able to plan on a long-range basis. RKE/PB individuals noted that very little work remains on current tasks, and that many engineers had to be laid off until future tasks are approved for them. It was noted that at one time there were four individuals on the QA staff and now there is only one in addition to the QA manager. Continuity on the HLW repository project, especially for the design engineers, may have significant effects on the quality of RKE/PB activities.

## Appendix C

### Observations pertinent to the conduct of the audit.

1. The audit team leader stated that the audit's preparation was rushed due to time pressures. The audit plan was specifically identified by the audit team leader as being below normal standards due to time pressures. However, the audit plan was dated March 4, 1986, at least five weeks prior to the audit.
2. The MAC "audit for effectiveness" program has merit especially if it is used to evaluate a written QA program for compliance to NQA-1. The use of the MAC program for implementation effectiveness reviews appears to be dependent on a successful combination of training, sampling, auditing techniques, and auditor qualification and experience which was not demonstrated by the audit team during this audit.
3. This audit especially makes it apparent that the NRC observer should spend one or two days prior to the audit's conduct at the DOE/contractor site where the audit preparation is taking place to allow for a more productive observation concerning the project office's management of the audit/overview function.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

JUN 02 1986

MEMORANDUM FOR: John J. Linehan, Acting Chief  
Repository Projects Branch, DWM

THRU: James E. Kennedy, Section Leader  
Repository Projects Branch, DWM

FROM: Susan G. Bilhorn  
Repository Projects Branch, DWM

SUBJECT: REPORT OF OBSERVATIONS MADE DURING SAIC QA AUDIT OF  
NNWSI ACTIVITIES AT USGS, DENVER MARCH 10-14, 1986

The purpose of this note is to document my observations regarding the subject audit. The audit plan, including scope, schedule and audit team, are attached as Enclosure 1.

The USGS is the NNWSI Project participant responsible for most of the geology and hydrology site investigations. SAIC is the contractor for NNWSI providing QA support to the project. The audit team conducting this audit was comprised of SAIC personnel and one participant from DOE headquarters.

Summary:

1. The audit team recommended USGS stop work on NNWSI activities because of significant problems found in numerous areas of the USGS QA program.
  - The SAIC/NNWSI audit team recommended a stop work order on NNWSI activities at USGS due to the number of significant problems found in the USGS QA program. USGS issued its own stopwork order at the conclusion of the audit, 3/14/86 (Enclosure 2). This order stops essentially all NNWSI technical activities performed by the USGS except: SCP and Exploratory Shaft Test Plan development; work, the suspension of which would cause unrecoverable loss of information; and research and testing to develop and/or evaluate techniques or procedures to be applied later under appropriate QA. USGS committed to making the necessary improvements to the QA program concentrating first on upgrading the QA plans for those activities which had not been stopped.

- NNWSI followed-up with an additional stopwork order which also required USGS to submit a plan of action, including milestones and schedules, for upgrading the QA program (see Enclosure 3).
- 2. This SAIC audit was an improvement over those previously observed, particularly with regard to preparation and conduct, however there still appears to be too much emphasis on compliance versus technical adequacy and better preaudit planning is necessary (see discussion under "The Audit").

The Audit:

1. Preparation -

- A. The SAIC audit team was better prepared for this audit than for those audits I observed in 1985. Most team members were aware of USGS QA program and ongoing technical activities. Most were also familiar with the checklist covering their areas of responsibility. In addition, the checklist was tailored to the USGS program, with emphasis on problem areas that had been identified during SAIC's prior review.
- B. Two checklists were prepared for this audit; a programmatic and a technical checklist. The programmatic checklist focused on the 18 criteria of NQA-1, while the technical checklist focused on site investigation plans, peer/technical reviews, and technical procedures.
- C. Coordination between SAIC and USGS prior to the audit was lacking. Audit interviews had not been arranged (schedules and individuals) prior to the preaudit meeting therefore last minute arrangements and adjustments were necessary.
- D. USGS had verbally requested this audit be postponed. The audit schedule conflicted with a performance allocation meeting and development of work plans. While the availability of USGS people (i.e., Principal Investigators) was not a difficulty, the potential problem did exist and such potential conflicts would best be resolved prior to start of the audit. In addition, based on SAIC review of the QA manual, the USGS QA program had already been found seriously deficient. SAIC had cited many of these deficiencies in a meeting with USGS in January, 1986.

## 2. USGS Involvement -

J. Wilmon, the USGS/NNWSI QA manager was the prime USGS interface. Others involved in QA activities for USGS/NNWSI who participated in the audit were: Susan Shipley (USGS, Menlo Park QA lead); Darrell Porter (SAIC, Golden-QA contract support); Gene Rush (USGS); Paul Carrera (USGS geologist temporarily assigned as QA support); and a representative from Los Alamos QA support. In addition, Robert Peterson from the Bureau of Reclamation (BOM) participated as an observer. Mr. Peterson is the QA lead for the NNWSI work recently delegated to BOM.

In the entrance meeting J. Wilmon presented a summary of the areas he acknowledged as deficient (Enclosure 4). Though unusual this did indicate an understanding of the problems involved.

## 3. Conclusion -

A. The audit was highly compliance-oriented in spite of the inclusion of technical team members and reviews of technical activities (see Enclosure 5 as illustration). This differs from the NRC approach to inspections and audits (such as IDI's) which focus more on the quality of technical work than on compliance with QA procedures.

B. In Wednesday's close-out session, during which that day's observations and findings were discussed, the team unanimously concluded that there were enough significant findings to merit a stopwork order. The audit continued until protocol for the stopwork order was decided and initiated by the appropriate individuals. Thursday evening the audit was ended prior to completion of the checklist. The Menlo Park extension of the audit was also canceled at this time.

J. Blaylock, the WMPO QA manager, and E. Cocorus, SAIC QA lead, flew in for consultation and to attend the exit interview.

C. The audit report contains 23 findings (Enclosure 5). The primary problem areas associated with these findings are summarized below.

1. Control of purchased materials and services
  - Procurement documents
  - Contractor QA requirements

2. Control of test samples
3. Audits
  - Qualification of auditors
  - Conduct and planning of external audits
  - Resolution of internal audit results
4. Calibration of measuring and test equipment
5. Indoctrination, training and certification of persons involved in technical and QA activities
6. Stopwork provisions and procedures
7. Responsibility and authority of USGS organizations involved in NNWSI, including QA department
8. Core library and core sample procedures
9. Peer review records
10. Planning of site investigations
11. Assignment and approval of QA levels

D. OGR issued a report regarding the subject audit on April 4, 1986 (Enclosure 6). To clarify a comment documented in this report (page 2, paragraph 7), I stated at the exit meeting that this represented the best prepared audit that I had observed SAIC conduct for NNWSI to date.

Concerns:

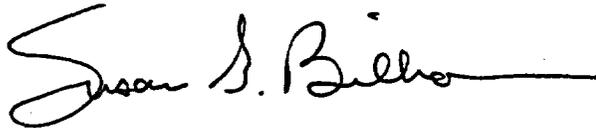
1. USGS admitted that staff size of the QA organization was not adequate. This has apparently been due to administrative difficulties and has not received the necessary management attention. Management support was committed by USGS and NNWSI during the close-out meeting. As follow-up, NNWSI has temporarily assigned one SAIC person (N. Voltura) to USGS to support their current efforts.
2. The recommendation for stopwork was anticipated by USGS to the point that a partial order had been previously drafted. If USGS was aware that problems in the QA program were bad enough to merit a stopwork order, it seems an audit should not have been necessary to cause its issuance.
3. The conditions which merit issuance of a stopwork order on repository activities during prelicensing have not been defined. Also the method, authority and responsibility for recommending a stopwork order based on audit findings are not in place, especially for audits conducted by a contractor, such as SAIC.

4. A potential problem with independence from cost and scheduling was apparent regarding audits conducted by contractors such as SAIC. In spite of the uncertainty associated with a first time recommendation of a stopwork order, I believe that the SAIC audit team gave undue attention to what they thought SAIC management and NNWSI would want to hear. In addition, the lead auditor was concerned about contacting the NNWSI QA manager to discuss the situation. I consider that if contracting organizations such as SAIC are to function as "extensions of project staff" in the area of QA, that they should feel free to act with project authority and exhibit the necessary independence from cost and scheduling.
5. Core handling and storage problems continue to exist. NNWSI has classified core handling (especially waxing) as a special process as defined in 10 CFR 50 Appendix B which requires application of extra QA measures, but USGS insists core handling can be adequately performed under a normally controlled technical procedure. In addition, NNWSI insists that USGS manage the core library though USGS has requested NNWSI make alternate arrangements.
6. One reason USGS issued an internal stopwork order was to control what activities could continue. Continuation of SCP activities is of concern since persons needed in the QA improvement efforts will be largely unavailable if working on the SCP and the SCP is a critical piece of work that needs adequate QA. It appears the schedule for issuance of the SCP is still a number one priority for NNWSI.

Observations:

1. NNWSI and DOE HQ attribute the term "technical audit" to NRC (initiated by NRC at the site visit, December 1984). NNWSI has been pushed, therefore, to conduct such audits but has been given little direction as to the definition or intent of the term. This has generated numerous interpretations and much confusion. NRC's intent should be clarified.
2. NRC staff have noted that the scope of the audits conducted by DOE/DOE projects have been too optimistic in that they attempt to cover all 18 criteria in less than 4 days. NNWSI has apparently interpreted this to mean that they need only evaluate the criteria which most directly affect the quality of work performed by each contractor and not audit against all 18 criteria stated in the requirements. The intent was, however, that the

adequacy of QA be evaluated as necessary to determine compliance with the requirements. In order to conduct an adequate evaluation audits may need to be longer or divided into parts. In addition, regular surveillance and review should indicate areas which need greater or lesser attention during audits.



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Enclosures:

1. Audit Plan
2. USGS Stopwork Order
3. NNWSI stopwork order on USGS
4. USGS Summary of Deficient QA Program Areas
5. Audit Report
6. Report of OGR Participation in WMPO QA Audit  
of USGS Denver

cc:

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