

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

QUALITY ASSURANCE AUDIT PLAN

FOR AUDIT YMP-94-06

OF

UNITED STATES GEOLOGICAL SURVEY

DENVER, COLORADO

JUNE 20 THROUGH 24, 1994

Prepared by: Charles C. Warren Date: 4-19-94

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Approved by:  Date: 4-20-94

Donald G. Horton  
Director  
Office of Quality Assurance

## 1.0 SCOPE

This full scope audit, to be performed by a team of auditors from the Yucca Mountain Quality Assurance Division (YMQAD), will evaluate the United States Geological Survey (USGS) Quality Assurance (QA) Program to determine whether it meets the requirements and commitments imposed by the Office of Civilian Radioactive Waste Management (OCRWM). This will be done by verifying implementation, adequacy, and effectiveness of systems in place, as well as verifying compliance with requirements.

In addition to the follow-up on any open Corrective Action Requests, a representative sample of deficiencies identified during previous QA audits and surveillances of USGS may be included in the scope of this audit to determine the effectiveness of USGS corrective actions.

The programmatic and technical elements to be audited during this full scope audit are identified in Section 4.0 of this audit plan.

## 2.0 AUDIT SCHEDULE

Pre-audit Team/Observer Meeting	8:00 a.m., June 20, 1994 Denver, Colorado
Pre-audit Conference	9:00 a.m., June 20, 1994 Denver, Colorado
Audit Activities	10:00 a.m. to 4:00 p.m. June 20, 1994 Denver, Colorado
	8:00 a.m. to 4:00 p.m. June 21 through 23, 1994
	8:00 a.m. to 11:30 a.m. June 24, 1994
Post-audit Conference	1:00 p.m., June 24, 1994 Denver, Colorado

There will be a daily YMQAD Audit Team/Observer Meeting at 4:00 PM and also a daily Audit Team Leader/Observer/USGS Meeting starting at 8:15 AM to discuss potential deficiencies and establish needed liaison.

### 3.0 REQUIREMENTS TO BE AUDITED AND APPLICABLE REFERENCES

The requirements to be audited will be contained in programmatic and technical checklists. These checklists will be developed from the latest available revision of the following documents.

- OCRWM Quality Assurance Requirements and Description Document
- USGS Quality Assurance implementing procedures
- Applicable Yucca Mountain Site Characterization Office Administrative Procedures - Quality

The conduct of the audit will be guided by the documents (latest revision) listed below:

- Quality Assurance Procedure (QAP) 18.2, "Audit Program"
- QAP 16.1, "Corrective Action"

### 4.0 ACTIVITIES TO BE AUDITED

#### Programmatic Elements

- 1.0 Organization
- 2.0 Quality Assurance Program
- 3.0 Design Control
- 4.0 Procurement Document Control
- 5.0 Implementing Documents
- 6.0 Document Control
- 7.0 Control of Purchased Items and Services
- 8.0 Identification and Control of Items
- 12.0 Control of Measuring and Test Equipment
- 16.0 Corrective Action
- 17.0 Quality Assurance Records
- 18.0 Audits

Supplement I, Software  
Supplement II, Sample Control  
Supplement III, Scientific Investigation

The following QA program elements were considered during the development of this audit plan and found to be not applicable, since the current USGS QA Program has no activity for which these elements apply:

- 9.0 Control of Special Processes
  - 10.0 Inspection
  - 11.0 Test Control
  - 13.0 Handling, Storage, and Shipping
  - 14.0 Inspection, Test and Operating Status
  - 15.0 Nonconformances
- Supplement IV, Field Surveying

Technical Elements

The following technical elements of the USGS QA Program will be audited:

Work Breakdown Structure (WBS) No.:	Title:
1.2.3.2.2	Rock Characteristics
1.2.3.2.8	Preclosure Tectonics
1.2.3.2.5	Postclosure Tectonics

The audit of technical activities will include an evaluation for the following:

1. Technical qualifications of scientific investigators and design personnel.
2. Understanding of procedural requirements as they pertain to scientific investigation activities.
3. Adequacy of technical procedures.
4. Development of scientific investigation planning documents, study plans, work supporting the Site Characterization Plan, and any related work products.

If the audit team identifies a need to verify additional programmatic or technical areas during the audit, these areas will be added to the audit scope and evaluated accordingly.

5.0 AUDIT TEAM MEMBERS

Charles C. Warren, YMQAD/Quality Assurance Technical Support Services (QATSS), Las Vegas, Nevada, Audit Team Leader

Robert E. Harpster, YMQAD/QATSS, Las Vegas, Nevada, Lead Technical Specialist

James Blaylock, YMQAD, Las Vegas, Nevada, Auditor

Donald J. Harris, YMQAD/QATSS, Las Vegas, Nevada, Auditor

Robert L. Howard, YMQAD/QATSS, Las Vegas, Nevada, Auditor

Stephen R. Maslar, YMQAD/QATSS, Las Vegas, Nevada, Auditor

Richard L. Maudlin, YMQAD/QATSS, Las Vegas, Nevada, Auditor

Jefferson R. McCleary, Management and Operating (M&O) contractor, Las Vegas, Nevada, Technical Specialist

Ralph D. Rogers, M&O, Las Vegas, Nevada, Technical Specialist

Thomas R. Swift, Headquarters Quality Assurance Division, Arlington, Virginia, Auditor

## 6.0 AUDIT CHECKLISTS

The following checklists will be used during the audit:

YMP-94-06-01, Programmatic Checklist

YMP-94-06-02, Technical Checklist