



**Department of Energy**  
Office of Civilian Radioactive Waste Management  
Yucca Mountain Site Characterization Office  
P.O. Box 98608  
Las Vegas, NV 89193-8608

SEP 26 1995

Robert W. Craig  
Acting Technical Project Officer  
for Yucca Mountain Site  
Characterization Project  
U.S. Geological Survey  
101 Convention Center Drive, Suite 860  
Las Vegas, NV 89109

VERIFICATION OF CORRECTIVE ACTION AND CLOSURE OF CORRECTIVE ACTION REQUEST (CAR) YM-94-048 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION'S (YMQAD) AUDIT YMP-94-06 OF U.S. GEOLOGICAL SURVEY (SCPB: N/A)

The YMQAD staff has verified the corrective action to CAR YM-94-048 and determined the results to be satisfactory. As a result, the CAR is considered closed.

If you have any questions, please contact either Robert B. Constable at 794-7945 or James Blaylock at 794-7913.

Richard E. Spence, Director  
Yucca Mountain Quality Assurance Division

YMQAD:RBC-4681

Enclosure:  
CAR YM-94-048

cc w/encl:

~~A. G. Spraul~~ NRC, Washington, DC  
S. W. Zimmerman, NWPO, Carson City, NV  
T. H. Chaney, USGS, Denver, CO  
R. W. Craig, USGS, Las Vegas, NV  
D. D. Porter, SAIC, Golden, CO

cc w/o encl:

W. L. Belke, NRC, Las Vegas, NV  
D. G. Sult, YMQAD/QATSS, Las Vegas, NV

020120

9510020336 950926  
PDR WASTE  
WM-11 PDR

YMP-5

102.7  
WM-11  
NH03

**OFFICE OF CIVILIAN  
RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY  
WASHINGTON, D.C.**

8 CAR NO.: YM-94-048  
PAGE: 1 OF 1  
QA

**CORRECTIVE ACTION REQUEST**

1 Controlling Document YMP-USGS-QMP-18.01, Rev. 4		2 Related Report No. YMP-94-05	
3 Responsible Organization USGS		4 Discussed With T. CHANEY	
5 Requirement: YMP-USGS-QMP-8.01, R4 contains the QARD requirements for identification and control of samples.			
6 Adverse Condition: The QMP-8.01, R4 requirements have not been fully incorporated into many of the implementing technical procedures and scientific notebooks. Two examples of procedures not being updated to QMP-8.01, R4 are HP-200, R0 and HP-249, R0.			
9 Does a Significant Condition Adverse to Quality exist? Yes ___ No <u>X</u> If Yes, Circle One: A B C D E		10 Does a stop work condition exist? Yes ___ No <u>X</u> ; If Yes - Attach copy of SWO If Yes, Circle One: A B C	
		3 Response Due Date: <u>20 WORKING DAYS</u> From <u>ISSUANCE</u>	
11 Required Actions: <input checked="" type="checkbox"/> Remedial <input checked="" type="checkbox"/> Extent of Deficiency <input checked="" type="checkbox"/> Preclude Recurrence <input type="checkbox"/> Root Cause Determination			
12 Recommended Actions: 1. Incorporate the QMP 8.01 requirements in the implementing documents. 2. Review the myriad of sample control procedures to identify interfaces and sequencing. 3. Remove what may be extraneous procedures.			
7 Initiator J. BLAYLOCK <i>C. C. Wannan for</i> <i>6-30-94</i>		14 Issuance Approved by: QADD <i>R. Blount</i> for Date <u>7-4-94</u>	
15 Response Accepted QAR <i>J. Blaylock</i> <i>B</i> <u>9/12/94</u> Date <u>9/8/94</u>		16 Response Accepted QADD _____ Date _____	
17 Amended Response Accepted QAR <i>J. Blaylock</i> Date <u>9/12/94</u>		18 Amended Response Accepted QADD <i>J. Blaylock</i> <i>R. Blount</i> <u>9/15/94</u> Date <u>9/12/94</u>	
19 Corrective Actions Verified QAR <i>James Blaylock</i> Date <u>9/21/95</u>		20 Closure Approved by: QADD <i>[Signature]</i> Date <u>9/26/95</u>	

OFFICE OF CIVILIAN  
RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY  
WASHINGTON, D.C.

CAR NO. YM-94-048  
PAGE: 1 OF 2  
QA

**CORRECTIVE ACTION REQUEST (Continuation Page)**

**1. CORRECTIVE ACTION RESPONSE FOR CAR No. YM-94/048**

- A. REMEDIAL ACTION:** The QA Office will provide guidance to the Hydrologic Investigations Program (HIP) and Geologic Studies Program (GSP) Implementation Specialists to identify requirements of QMP-8.01 that must be addressed to technical procedures. This guidance will address the interfaces with other sample management requirements. Within 30 days of receipt of that guidance, the HIP and GSP Chiefs will submit a schedule to the QA Office for the review and revision of active technical procedures that deal with samples. Completion of the schedule will be monitored by the QA Office through the audit and surveillance program.
- B. EXTENT OF THE DEFICIENCY:** The HIP and GSP Chiefs will submit a list of all active technical procedures that contain requirements for the identification, control, and traceability of samples. At the same time the technical procedure revision schedule is submitted, any procedures not in use and that are not anticipated to be used in the near future will be rescinded by the appropriate Principal Investigator.
- C. ROOT CAUSE DETERMINATION:** Not required.
- D. CORRECTIVE ACTION TO PRECLUDE RECURRENCE:** Whenever a QMP is revised or modified, QMP-5.03 requires the QA Office to evaluate the need for remedial actions. For each case that affects technical procedures, the QA Office will establish a tracking mechanism with follow-up to assure that the actions are completed in a timely fashion.

QMP-5.01 will be modified to provide for simplified technical procedure revisions when the changes are non-technical in nature.

**2. For each action above, identify the name of the individual assigned responsibility for completion of the action and the anticipated (or actual, if complete) completion date.**

- |  |          |
|--|----------|
| 1.A. T.H. Chaney, Quality Assurance Manager              | 09/15/94 |
| D.H. Appel, Hydrologic Investigations Program Chief      | 10/15/94 |
| J.S. Stuckless, Geologic Studies Program Chief           |          |
| 1.B. D.H. Appel, Hydrologic Investigations Program Chief | 10/15/94 |
| J.S. Stuckless, Geologic Studies Program Chief           |          |
| 1.D. T.H. Chaney, Quality Assurance Manager              | 09/15/94 |

8/1/94 Ltr. Hayes to Spence

OFFICE OF CIVILIAN  
RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY  
WASHINGTON, D.C.

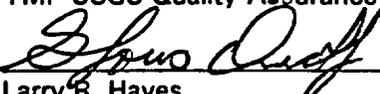
CAR NO. YM-94-048  
PAGE: 2 OF 2  
QA

CORRECTIVE ACTION REQUEST (Continuation Page)

3. RESPONSE APPROVED:

  
\_\_\_\_\_  
Thomas H. Chaney  
YMP-USGS Quality Assurance Manager

8/1/94  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Larry R. Hayes  
foi Chief, Yucca Mountain Project Branch

8/1/94  
\_\_\_\_\_  
Date

OFFICE OF CIVILIAN  
RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY  
WASHINGTON, D.C.

CAR NO. YM 94-048  
PAGE: 1 OF 2  
QA

**CORRECTIVE ACTION REQUEST (Continuation Page)**

**1. AMENDED CORRECTIVE ACTION RESPONSE FOR CAR NO. YM-94-048**

**A. REMEDIAL ACTION:**

1. The QA Office will provide guidance to the Hydrologic Investigations Program (HIP) and Geologic Studies Program (GSP) Implementation Specialists that identifies the requirements from QMP-8.01 and DOE YAP samples procedures that must be addressed in technical procedures. This guidance will include the interfaces between the sample management procedures.
2. Within 30 days of receipt of that guidance, the HIP and GSP Chiefs will submit a schedule of the QA Office for the review and revision of active technical procedures that deal with samples.
3. A copy of the schedule will be provided to DOE YMQAD.

**B. EXTENT OF THE DEFICIENCY:** The HIP and GSP Chiefs will submit a list of all active technical procedures that contain requirements for the identification, control, and traceability of samples. At the same time the technical procedure revision schedule is submitted, any procedures not in use and that are not anticipated to be used in the near future will be rescinded by the appropriate Principal Investigator.

**C. ROOT CAUSE DETERMINATION:** Not required.

**D. CORRECTIVE ACTION TO PRECLUDE RECURRENCE:** Whenever a QMP is revised or modified, QMP-5.03 requires that QA Office to evaluate the need for remedial actions. For each case that affects technical procedures, the QA Office will establish a tracking mechanism with follow-up to assure that the actions are completed in a timely fashion.

8/23/94 LTR. Hayes to Spence

OFFICE OF CIVILIAN  
RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY  
WASHINGTON, D.C.

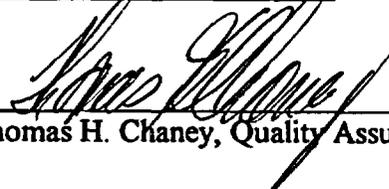
CAR NO. YM-94-048  
PAGE: 2 OF 2  
QA

**CORRECTIVE ACTION REQUEST (Continuation Page)**

2. For each action above, identify the name of the individual assigned responsibility for completion of the action and the anticipated (or actual, if complete) completion date.

- 1.A. (1) T. H. Chaney, Quality Assurance Manager 09/15/94  
(2) D. H. Appel, Hydrologic Investigations Program Chief 10/15/94  
J. S. Stuckless, Geologic Studies Program Chief  
(3) T. H. Chaney, Quality Assurance Manager \*11/01/94  
\*NOTE: This date represents delivery of the schedule to YMQAD
- 1.B. D. H. Appel, Hydrologic Investigations Program Chief 10/15/94  
J. S. Stuckless, Geologic Studies Program Chief
- 1.D. T. H. Chaney, Quality Assurance Manager 09/15/94

3. **RESPONSE APPROVED!**

  
\_\_\_\_\_  
Thomas H. Chaney, Quality Assurance Manager

8/23/94  
Date

  
\_\_\_\_\_  
Larry R. Hayes,  
Chief, Yucca Mountain Project Branch

8/23/94  
Date

OFFICE OF CIVILIAN  
RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY  
WASHINGTON, D.C.

CAR NO. YM 94-048  
PAGE: 1 OF 2  
QA

**CORRECTIVE ACTION REQUEST (Continuation Page)**

1. **AMENDED CORRECTIVE ACTION RESPONSE FOR CAR NO. YM-94-048**

A. **REMEDIAL ACTION:**

1. The QA Office will provide guidance to the Hydrologic Investigations Program (HIP) and Geologic Studies Program (GSP) Implementation Specialists that identifies the requirements from QMP-8.01 and DOE YAP samples procedures that must be addressed in technical procedures. This guidance will include the interfaces between the sample management procedures.
2. Within 30 days of receipt of that guidance, the HIP and GSP Chiefs will submit a schedule of the QA Office for the review and revision of active technical procedures that deal with samples.
3. A copy of the schedule will be provided to DOE YMQAD.

B. **EXTENT OF THE DEFICIENCY:** The HIP and GSP Chiefs will submit a list of all active technical procedures that contain requirements for the identification, control, and traceability of samples. At the same time the technical procedure revision schedule is submitted, any procedures not in use and that are not anticipated to be used in the near future will be rescinded by the appropriate Principal Investigator.

C. **ROOT CAUSE DETERMINATION:** Not required.

D. **CORRECTIVE ACTION TO PRECLUDE RECURRENCE:** Whenever a QMP is revised or modified, QMP-5.03 requires that QA Office to evaluate the need for remedial actions. For each case that affects technical procedures, the QA Office will establish a tracking mechanism with follow-up to assure that the actions are completed in a timely fashion.

11/3/94 LTR. CHANEY TO SPENCE

VERIFICATION OF CORRECTIVE ACTION OF CAR YM-94-048

The CAR was initiated because sampling requirement from YMP-USGS-QMP-18.01, Rev. 4, did not flow down sampling requirement into the controlling procedures. As a result of this CAR, the USGS reviewed five (5) geologic procedures, thirty-nine (39) hydrologic procedures, and fourteen (14) scientific notebooks to confirm that requirements from the procedure listed above were incorporated, that the procedures/scientific notebook were needed. Based on a review of actions taken, CAR YM-94-048 is closed. The list of procedures and scientific notebooks that were reviewed, revised, or modified is as follows:

GCP-35, R0	HP-07, R2	HP-204, R0 + M1	HP-259, R6 + M1
GCP-36, R0	HP-23, R3	HP-209, R1	HP-260, R2
GPP-01, R2 + M1	HP-56, R3	HP-210, R0	HP-262, R0
GPP-11, R2	HP-78, R1	HP-223, R0 + M1	HP-263, R0
GPP-21, R1	HP-86, R2	HP-225, R1	HP-265, R0 + M1
SN-0006	HP-91, R3	HP-229, R3	HP-266, R0
SN-0016	HP-125, R0	HP-230, R0	HP-268, R0 + M1
SN-0025	HP-126, R1 + M1	HP-240, R0	HP-280, R0
SN-0026	+ M2	HP-242, R1	
SN-0029	HP-131, R3	HP-243, R0 + M1	
SN-0031	HP-160, R2 + M1	HP-244, R0 + M1 + M2	
SN-0032	HP-176, R2	HP-245, R0	
SN-0034	HP-192, R2	HP-249, R0 + M1	
SN-0043	HP-200, R0	HP-252, R1 + M1	
SN-0044	HP-202, R0	HP-255, R0	
SN-0046		HP-256, R0	
SN-0053		HP-258, R0	
SN-0054			
SN-0058			

Based on the completion of corrective actions, CAR YM-94-048 is closed.

James Blaylock  
James Blaylock, QAR

9/22/95  
Date

**Topics to be addressed in technical procedures and scientific notebooks  
that describe the identification and control of samples**

1. Discuss how samples will be uniquely identified from collection through final use. Include specifics on orientation (top, bottom; north, south, etc.) relative to the location that was sampled, if that information is important to the study.
2. If samples are to be packaged, shipped, handled, and/or preserved, discuss container markings or labeling (such as RADIOACTIVE, PERISHABLE, REFRIGERATE, KEEP DRY, etc.) to ensure that sample integrity and traceability is maintained.
3. If samples may be transferred to another PI or organization, discuss how traceability will be maintained.
4. If samples may be subdivided, discuss how the original identifier will be transferred to each part of the sample (or its container).
5. If markings may be subject to damage or deterioration (from heat, humidity, etc.), alternate methods of maintaining traceability should be discussed.
6. Discuss a method to ensure that sample identification will be traceable to all documentation (sample collection forms, technical procedure, scientific notebooks, printouts, etc.) associated with the samples.
7. If Study Plans, Test Planning Packages, or other documents contain specific sample requirements, discuss how those will be implemented.
8. Discuss methods and equipment needed for sample:
  - a. collection,
  - b. handling,
  - c. storage,
  - d. cleaning,
  - e. packaging,
  - f. shipping,
  - g. preservation,
  - h. containers.
9. Discuss any special training or experience needed.