

OCRWM-HQ QUALITY ASSURANCE SURVEILLANCE REPORT
SURVEILLANCE OF THE YMP QA PROGRAM QUALIFICATION
AUDIT (89-04) OF THE UNITED STATES GEOLOGICAL SURVEY (USGS)

SURVEILLANCE NUMBER OCRWM-HQ-SR-89-011

CONDUCTED AUGUST 14 - 23, 1989

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Surveillance Team Leader
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Director, OQA

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WM-11

A. INTRODUCTION

The surveillance team consisted of the following personnel:

Personnel contacted during this surveillance:

B. SURVEILLANCE SCOPE

1. Audit Team
2. Audit Planning
3. Pre and Post Audit Conferences
4. Audit Conduct
5. Audit Results
6. Interfaces

Note: The scope of the audit was limited in the following ways: 1) Due to privacy act considerations, the evaluation of the training and qualification of USGS personnel was severely restricted, and 2) due to the lack of completed technical work, verification of QA Program implementation was limited, as was the overall evaluation of the effectiveness of the USGS QA Program.

C. REQUIREMENTS SURVEILLED

1. YMP Quality Assurance Plan 88-9 (as applicable)
2. YMP Quality Assurance Program Plan 88-1 (as applicable)
3. QMP-16-03, Rev. 3, Standard Deficiency Reporting System
4. QMP-18-01, Rev. 1, Audit System for the Waste Management
Project Office

D. RESULTS OF SURVEILLANCE

The overall conclusion of this surveillance is that the YMPO audit of USGS was performed in accordance with YMPO QA Program Requirements. The following is a summary of the results of the specific areas included in the surveillance:

Audit Team

Qualification and training records of the audit team members were not evaluated during this surveillance. The audit was conducted in Denver, Yucca Mountain, and the USGS office in Las Vegas and there was no opportunity to review the record copies of qualification and training documents.

Observation of the audit process and discussions with team members indicated that the auditors were well aware of the YMPO and USGS QA Program requirements and were very capable. The Technical Representative on the surveillance felt that the technical auditors were very well qualified to evaluate the adequacy of the elements they were assigned. This evaluation was based on personnel knowledge of the technical auditor's qualifications, observing the technical auditor during their audit of the USGS technical staff, and discussion with the technical auditors concerning their experience in the areas audited.

Audit Planning

The auditors were well prepared for the audit and both the programmatic and the technical checklists were comprehensive. Areas of potential concern, which were identified during preparation for the audit, were included on the checklist as notes to the responsible auditor. The technical auditors were knowledgeable in the areas they were to evaluate and had input into the technical checklist. The identified scope of the audit took into account that, due to various factors such as the YMPO imposed Stop-Work Order, little completed, or in progress, technical work would be available for review during the audit (except for monitoring activities).

Pre/Post Audit Conference

The purpose and scope of the audit were clearly stated at the pre-audit conference, the audit team was introduced, the planned audit schedule and audit methods were discussed, and the audited organization was given the opportunity to ask questions. Findings were discussed at the post-audit conference and the audited organization was given an opportunity to respond and ask questions. Both positive and negative audit findings were discussed.

Audit Conduct

The audit was conducted in a professional manner. The auditors were thorough and effective in their investigations. The audit team leader is to be commended for his actions in effectively dealing with the large number of auditors and observers involved in the audit.

Reporting/Interface

The auditors kept USGS personnel informed of potential findings as they were discovered. The audit team (including the observers) met daily to discuss the results of the day's auditing activities and to allow the observers to voice their concerns. The lead auditor presented the results of the daily meeting to USGS senior management. Potential findings (positive as well as adverse) were clearly presented and USGS personnel were given ample opportunity to respond to adverse findings.

Audit Results

Five (5) deficiencies were identified during the audit. Four (4) of the deficiencies were directed at USGS and concerned: 1) study plan reviews; 2) M&TE not being calibrated within the required timeframe; 3) calibration tracking records not being correctly completed; and 4) acceptance, into the Local Records Center, of incomplete documents. One finding was directed toward the Yucca Mountain Project Office for directing USGS not to forward records to the Central Records Facility. Nine (9) observations [six (6) against USGS and three (3) against the Project Office] were identified during the audit. These observations generally dealt with minor procedural and implementation problems. The findings generated during the audit were appropriate and based on objective evidence. This includes both adverse findings, documented as deficiencies and observations, and positive findings as reported during daily caucuses and at the post-audit conference.

The overall evaluation of the USGS program, by the audit team, was that the appropriate controls (procedures, plans, etc.) were in place and were adequate to perform quality work. The audit team leader made it clear that this evaluation applied to the programmatic aspects of the USGS QA Program and that due to the lack of available evidence of implementation, no evaluation of the effectiveness of the QA Program could be made. This was appropriate from the standpoint that the evaluation was made based on objective evidence, which in this case was generally limited to programmatic adequacy.

E. DEFICIENCIES/OBSERVATIONS

There were no deficiencies or observations identified during this surveillance.

F. CONFERENCES

An informal post-surveillance conference was held, with the audit team leader, on August 23, 1989.

G. REQUIRED ACTION

Since no deficiencies or observations were identified as a result of this surveillance, no action is required by the YMP in response to this report.

**TASK FORCE SURVEILLANCES
OF THE USGS QA PROGRAM**

SURVEILLANCE NUMBER	PROCEDURE AND SCOPE	SUMMARY RESULTS	DEFICIENCIES ISSUED
YMP-SR-89-030	QMP-3-13 Design Input QMP-8-03 Identification and Control of trans- mitted data QMP-16-01 Control of Corrective Action Reports QMP-16-02 Control of Stop Work Orders	Indoctrination and training to procedure QMP-16-01 was not completed to date.	USGS-CAR-89-01 (Closed)
YMP-SR-89-031	QMP-5-03 Development and Maintenance of Management Procedures QMP-5-04 Preparation and Control of USGS QA Program Plan QMP-6-01 Document Control	Indoctrination and training to procedures was not completed to date.	USGS-CAR-89-01 (Closed)
YMP-SR-89-091	QMP-3-05 Design Site Investigation Control QMP-4-01 Procurement Document Control QMP-4-02 Administrative Operations and Procurement QMP-7-01 Control of Purchased Items and Services QMP-13-1 Handling Storage and Shipping	QMP's 4-02, 7-01, and 13-01 were revised to comply with the require- ments of NWSI/88-9, Rev. 2.	N/A
YMP-SR-89-092	QMP-1-01 Organization Procedure QMP-2-01 Management Assessment of the YMP USGS Quality Assurance Program. QMP-2-02 USGS Personnel Qualification and Training QMP-2-06 Control and Readiness Reviews QMP-2-07 Training Development and Documentation QMP-12-01 Instrument Calibration	QMP-2-02 and 2-07 do not make provisions for lifetime QA records. QMP-1-01 does not address QA conflicts within USGS YMP.	YMP-SDR-331 (Open) USGS-NCR-89- 21 (Closed)

**TASK FORCE SURVEILLANCES
OF THE USGS QA PROGRAM**

SURVEILLANCE NUMBER	PROCEDURE AND SCOPE	SUMMARY RESULTS	DEFICIENCIES ISSUED
YMP- SR-89-093	QMP-2-05 Qualification of Audit and Surveillance Personnel QMP-15-01 Control of Nonconforming Items QMP-18-01 Audits QMP-18-02 Surveillances	QMP-15-01 and 18-01 were revised to comply with the requirements of NWSI/88-9, Rev. 2. USGS Surveillance Re- ports and supporting documentation were deficient. Responses to internal audit findings were late.	USGS-NCR-89-15 (Closed) USGS-NCR-89-18 (Open)
YMP-SR-89-094	QMP-3-06 Scientific Investigation Plan QMP-3-07 Technical Review Procedure QMP-3-11 Peer Review QMP-5-01 Preparation of Technical Procedures QMP-5-02 Preparation and Control of Drawings and Sketches	QMPs 3-06, 3-11, 5-01, and 5-02 were revised to comply with the requirements of NWSI/88-9, Rev. 2. No documented evidence of technical review for 3 SIPs. Technical procedures lacked documented evidence of technical review.	USGS-NCR-89-17 (Closed) USGS-NCR-89-19 (Closed)

**TASK FORCE SURVEILLANCES
OF THE USGS QA PROGRAM**

SURVEILLANCE NUMBER	PROCEDURE AND SCOPE	SUMMARY RESULTS	DEFICIENCIES ISSUED
YMP-SR-89-095	QMP-3-04 Technical Review Approval and Distribution of YMP-USGS Publications QMP-3-10 Verification of Scientific Investigations QMP-8-01 Identification and Control of Samples QMP-16-03 Trend Analysis QMP-17-01 YMP-USGS Record Management	QMPs 3-04 and 16-03 were revised to comply with the requirements of NWSI/88-9, Rev. 2. Deficiencies exist with the implementation of QMP-17-01.	USGS-NCR-89-16 (Open)
YMP-SR-89-109	QMP-2-08 Contractor Personnel Qualification and Training QMP-5-05 Scientific Notebook Control of Technical Activities	QMP-5-05 was revised to comply with the requirements of NWSI/ 88-9, Rev. 2. QMP-2-08 does not identify personnel records as lifetime QA records.	YMP-SDR-331 (Open)
YMP-SR-89-110	QMP-3-03 Software Quality Assurance QMP-3-14 Software Configuration Management	QMP-3-14 was revised to comply with the requirements of NWSI/ 88-9, Rev. 2.	N/A

USGS OPEN QA DEFICIENCIES

DEFICIENCY NO.	DESCRIPTION OF DEFICIENCY
THE BELOW LISTED SDRs AND NCRs ARE NOT A CONSTRAINT TO ADEQUATELY SUPPORT THE INITIATION OF QUALITY AFFECTING ACTIVITIES	
YMP-SDR-018	Calibrations not traceable to National Bureau or Standards.
YMP-SDR-135	Procurement document control not in compliance with requirements.
YMP-SDR-143	No documented assessment of indoctrination and training needs.
YMP-SDR-145	Minimum education and experience requirements are not established in position descriptions for QA staff.
YMP-SDR-156	Procedures not updated to fully describe Quality Activities.
YMP-SDR-161	QA records not processed to Project Records as required by procedure.
YMP-SDR-331	Records of personnel qualifications are not being identified as QA Records in procedure.
YMP-SDR-415	Measuring and Test Equipment found out of calibration without an NCR written in a timely manner.
YMP-SDR-416	No evidence that calibration record forms had been reviewed before being processed as QA records.
YMP-SDR-417	No objective evidence was provided that technical reviews performed for study plans provided evidence that reviewers comment resolution had been acknowledged.
YMP-SDR-418	Calibration record forms were found in Local Record Center that were not in compliance with procedure requirements.
YMP-SDR-488	Purchase Order discrepancies.
YMP-SDR-489	Inadequate calibration procedures.
USGS-8901-03	Not all activities have been assigned proper QA levels.
USGS-8901-05	SIP-3334G-01 R0 does not have a sample tracking system for hydrologic and drill-cutting samples.

USGS OPEN QA DEFICIENCIES

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THE BELOW LISTED SDRs AND NCRs ARE NOT A CONSTRAINT TO ADEQUATELY SUPPORT THE INITIATION OF QUALITY AFFECTING ACTIVITIES	
USGS-8901-06	SIPs were not used for samples collected while QAP-8.01, R1 was in effect.
USGS-8902-01	Three people lack indoctrination and training.
USGS-8902-04	Late issue of Publications to LRC, lack of Tech review forms.
USGS-8903-06	Late responses to NCRs.
USGS-EA9001-01	Use of M&TE not calibrated to MIST standards.
CAR-88-01	Procurement Document Control, Supplier Control and Material Acceptance.
CAR-89-02	Site Potentiometric Level Evaluation not in compliance with QAP (WBS 1.2.3.3.3.1G).
CAR-89-03	Precipitation and Meteorological Monitoring, Surface Water Run-off Monitoring, Transport of Debris by Severe Runoff, Characterization of Flood Potential of Yucca Mt. Site not in compliance with QAP.
CAR-89-04	Regional Potentiometric Level Studies (WBS 1.2.3.3.3.4G) not in compliance with QAP.
CAR-89-05	Evaluation of Infiltration Data from Shallow Wells at Yucca Mt. (WBS 1.2.3.3.4.2G) not in compliance with QAP.
CAR-89-06	Site Vertical Borehole Studies (unsaturated zone) (WBS 1.2.3.3.4.3G) not in compliance with QAP.
CAR-89-07	Gaseous Chemical Investigation at Well UZ-1 not in compliance with QAP (WBS 1.2.3.3.4.4G).
CAR-89-08	Analog Recharge Studies not in compliance with QAP (WBS 1.2.3.3.6.0G).
CAR-89-09	Monitor Current Seismicity not in compliance with QAP (WBS 1.2.3.2.3.3G).
CAR-89-10	Relevel Base Station Network not in compliance with QAP (WBS 1.2.3.2.3.3G).

USGS OPEN QA DEFICIENCIES

DEFICIENCY NO.	DESCRIPTION OF DEFICIENCY
THE BELOW LISTED SDRs AND NCRs ARE NOT A CONSTRAINT TO ADEQUATELY SUPPORT THE INITIATION OF QUALITY AFFECTING ACTIVITIES	
CAR-89-11	Modeling of Soil Properties in Yucca Mt. Region not in compliance with QAP (WBS 1.2.3.3.7.0G).
CAR-89-12	Gaseous Phase Circulation Study not in compliance with QAP (WBS 1.2.3.3.4.6G).
CAR-89-13	Documentation of Technical Reviews.
CAR-89-14	Trend of late calibrations.
NCR-88-26	No SIP on meteorological activity.
NCR-88-33	Deficient MPs regarding equipment cal., limitations and accuracies.
NCR-89-16	Record storage area and activities.
NCR-89-18	Surveillance records have several deficiencies.
NCR-89-20	Document Control Problems.
NCR-89-23	Late responses to deficiency documents.
NCR-89-29	Use of unapproved vendors (NGS cal. Mapping Div.).
NCR-89-30	Use of an unapproved vendor (OWL).
NCR-90-01	Calibrations overdue.
NCR-90-02	Meter failed during experiment/meter past due for calibration.
NCR-90-06	Calibration problems from CAR.
NCR-90-07	Calibration problems from CAR.
NCR-90-09	Procurement Document Control - No. C of C, vendor not accepting P.O.
NCR-90-12	Use of vendors not on the AVL.
NCR-90-13	Validation Problems with QA Records.

USGS OPEN QA DEFICIENCIES

DEFICIENCY NO.	DESCRIPTION OF DEFICIENCY
THE BELOW LISTED SDRs AND NCRs ARE NOT A CONSTRAINT TO ADEQUATELY SUPPORT THE INITIATION OF QUALITY AFFECTING ACTIVITIES	
NCR-90-14	QA Calibration Forms not in compliance with QMP-17-01.
NCR-90-15	QMP mods. not incorporated into revs. within 4 months.
NCR-90-16	Improperly authenticated records.
NCR-90-17	Failed Transducers.

YUCCA MOUNTAIN PROJECT OFFICE QUALITY MANAGEMENT PROCEDURE

N-QA-016
6/88

Title

STANDARD DEFICIENCY REPORTING SYSTEM

No. QMP-16-03

Rev. 1

Effective Date 6/5/89

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FIGURE 5

SDR SEVERITY LEVEL CHECKLIST

N-QA-037
4/89

I. ASSIGN A SEVERITY LEVEL OF 1 IF ONE OR MORE OF THE FOLLOWING IS TRUE.

	Yes	No
1. Did the deficiency result in significant damage to natural barriers, structures, systems, or components that will require extensive evaluation, extensive redesign, or extensive repair in order to assure public health and safety?	—	—
2. Does the deficiency involve loss of essential data or information needed for licensing?	—	—
3. Does the deficiency constitute a significant deficiency in design, construction, testing, or performance assessment that were detected subsequent to formal quality verification and acceptance?	—	—
4. Does the deficiency constitute a significant deficiency in design as approved for construction such that the design deviates extensively from design criteria and bases?	—	—
5. Does the deficiency constitute a significant deviation from performance objectives or specifications that will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of a natural barrier, structure, system, or component to meet design criteria and bases?	—	—
6. Does the deficiency constitute a significant error detected in a computer program after it has been released for use?	—	—
7. Does the deficiency constitute a significant breakdown in a participant's QA program and/or repetitive, programmatic and hardware deficiencies for which previous corrective action has not been reasonably prompt or effective?	—	—

II. ASSIGN A SEVERITY LEVEL OF 2 IF THE ANSWERS TO ALL QUESTIONS IN PART I ARE NO AND ONE OR MORE OF THE FOLLOWING IS TRUE:

	Yes	No
1. Could failure to correct deficiency have a potentially adverse impact on the health or safety of operations personnel?	—	—
2. Does the deficiency constitute operating outside the scope of the quality program or approved quality procedures where both remedial and corrective actions are required?	—	—
3. Does the deficiency constitute a repetitive hardware deficiency for which no previous corrective action measures exist?	—	—

III. ASSIGN A SEVERITY LEVEL OF 3 IF THE ANSWERS TO ALL QUESTIONS TO PARTS I AND II ARE NO.

OAE/Lead Auditor

QA Division Manager

POM

Signature/Date

Signature/Date

Signature/Date