



Department of Energy  
Washington, DC 20585

QA: L

OCT 30 1997

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VERIFICATION OF CORRECTIVE ACTION AND CLOSURE OF DEFICIENCY  
REPORT (DR)YM-96-D-100 RESULTING FROM OFFICE OF QUALITY  
ASSURANCE (OQA) AUDIT HQ-ARC-96-003 OF YUCCA MOUNTAIN SITE  
CHARACTERIZATION OFFICE ACTIVITIES

The OQA staff has verified the corrective action to DR YM-96-D-100 and determined the results to be satisfactory. As a result, the DR is considered closed.

If you have any questions, please contact either James Blaylock at (702) 794-1420 or Patrick V. Auer at (702) 295-2665.

*James Blaylock*  
Donald G. Horton, Director  
Office of Quality Assurance

OQA:JB-0203

Enclosure:  
DR YM-96-D-100

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*Recip: NMSS/PAHL*

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

8  Performance Report  
 Deficiency Report  
 NO. YM-96-D-100  
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**PERFORMANCE/DEFICIENCY REPORT**

1 Controlling Document: Quality Assurance Requirements Document (QARD), Rev. 5, Section 17.0	2 Related Report No. Audit HQ-ARC-96-003
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3 Responsible Organization: Yucca Mountain Site Characterization Office (YMSCO) - AMSP	4 Discussed With: Diane McAlister
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5 Requirement/Measurement Criteria:  
 QARD Section 17.2.2 B. states that individuals creating QA records shall ensure that the QA records are legible, accurate, complete, appropriate to the work accomplished, and identifiable to the item(s) or activity(s) to which they apply.

6 Description of Condition:  
 Contrary to the requirement, in attempting to follow-up on the status and condition of records generated in relation to the implementation of procedure YAP-SIII.3Q, Processing of Technical Data on the Yucca Mountain Site Characterization Project, the following problems were identified with the sampled packages as identified by their respective Data Tracking Numbers (DTN):

A. DTN MO07QED0000003.001 identified on the Technical Data Information Form (TDIF) that the identification of the acquired data was from a gyroscopic directional survey for borehole UE-25-WT11. However, the Technical Data Submittal indicated that the directional survey was conducted at a different location, i.e. USW-WT-11.

B. DTN GS940508312231.006 records package table of contents identifies the borehole as USW UZ-16, while the TDIF identifies it as borehole UE-25 UZ#16. Also, in the comments section of the TDIF there is an indication that the TDIF was revised on 7/11/96, while the final "checked" date appears to be 7/7/96. Also, there appears to be no link between the sample ID numbers and the data attached to the TDIF or it is missing.

(See continuation).

7 Initiator Richard Peck Date 09/11/96	9 Is condition an isolated occurrence? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown; Must be Yes if PR
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10 Recommended Actions: (Not required for PR)

- Investigate population for other records problems.
- Determine significance of these deficiencies and the potential impact on the use of the data.

11 QA Review QAR [Signature] Date 9/18/96	12 Response Due Date 10/31/96
----------------------------------------------	----------------------------------

13 Affected Organization QA Manager Issuance Approval: (QAR for PR) Printed Name Donald G. Horton Signature [Signature] for Date 9/18/96
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22 Corrective Actions Verified QAR [Signature] Date 10-2-97	23 Closure Approved by: (N/A for PR) AOQAM [Signature] for Date 10/29/97
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PERFORMANCE/DEFICIENCY REPORT RESPONSE

14 Remedial Actions:

A. DTN MO07QED000003.001- The interpretation by the auditor that the directional survey was conducted at a different location (borehole) resulting from what appeared to be a different borehole identified on the TDIF vs. the transmitted data. Actually, the borehole identified on the TDIF and the data are the same. The discrepancy resulted from a lack of standardization for borehole identification.

Borehole identifiers will be standardized in the GENISES database and a cross reference table will be constructed and provided to the RPC. It is cost prohibitive to change all existing documentation in the RPC to conform to the standardized identifiers. Consequently, the RPC must provide notification with each retrieval request directing the requestor to consult the cross reference table or the GENISES database for the correct borehole identification nomenclature.

(continued on attached)

15 Extent of Condition: (Not required for PR)

It is virtually impossible to determine the exact extent of this condition without a record by record search of all files in the Records Processing Center. It is clear however that inconsistent annotation of borehole identifiers has been a documentation problem for some time. Fortunately, the annotation inconsistencies are trivial in that the misidentified boreholes can be easily correlated with the correct borehole identifiers. To demonstrate the trivial nature of the borehole identifier inconsistencies, an explanation of the initial borehole identification concept is necessary.

(Continued on attached)

16 Root Cause Determination: (Not required for PR)

Required  Yes  No

17 Action to Preclude Recurrence: (Not required for PR)

Required  Yes  No

After the Technical Data Management group completes the borehole identification standardization effort, a Directive letter will be issued to each project participant TPO and Lab Lead requiring any reference to boreholes be consistent with the standard identifiers in the GENISES database.

18 Corrective Action Completion Due Date:

09/30/97

19 Response by: Steve Bodnar

Initial

Amended

Date 12/19/96

Phone 5-4844

20 Response Accepted

QAR

*Pat Chue*

Date

1-31-97

21 Response Accepted (N/A for PR):

AQQAM

Date

ENCLOS  
2/12/97

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6. Description of Condition (Continued):

C. DTN GS940508312231.007 indicates on the TDIF that the borehole numbers are USW UZ-N11, USW UZ-N15, USW UZ-N16, etc. The relative humidity oven calculation sheets attached to the TDIF show the numbering with a character moved (e.g., UZN-11, UZN-15, UZN-16, etc.). Also the TDIF package indicates that it is composed of three (3) pages, while the package is actually composed of twenty-five (25) pages. The attached data sheets are not paginated, therefore making it difficult to determine if all data is actually contained relevant to that particular TDIF.

D. Relevant to the pagination issue mentioned above, it appears that most of the Data Sheets attached to the sampled TDIF packages were not numbered as pages of the respective package. This makes accountability difficult and raises the question as to whether or not all data has been properly recorded and documented as a record..

#### 14. Remedial Action (continued)

B. DTN GS940508312231.006- The borehole identification discrepancy between the records package table of contents and the TDIF result from the lack of standardization as described in Remedial Action "A".

The final "checked" date is the date the original TDIF was filled out and checked. The revised TDIF date in the TDIF comment field records the last revision of the TDIF. There is no procedural requirement to check, sign-off and date the TDIF after such minor revisions, therefore no remedial action is necessary.

The sample ID numbers provided with the TDIF are SPC numbers provided by the Sample Management Facility (SMF) to the sample requestor. The requestor uses the SMF provided samples to cut up into many test coupons for experimentation and creates identifiers for each coupon. The relationship between the coupon identifiers and the sample SPC number is documented in the PI's report. The important information to capture is where the samples are taken from in the field, which the SPC number provides to the database. There is no violation of current procedure with this process, therefore no remedial action is necessary.

C. DTN GS940508312231.007- The discrepancy between the TDIF and the data is the lack of borehole identification standardization as discussed in remedial action "A".

The three page count annotated on the TDIF indicates the number of TDIF pages, not the number of data pages associated with the record package submittal. The record package Table-of-contents reflects the total number of pages submitted for each portion of the record package. There is no requirement for pagination of submitted data sheets because the total number of pages is annotated on the Table-of-Contents. No remedial action is necessary.

D. There is no Records Procedure requirement to paginate data submittals. The Record Package Table-of-Contents identifies the number of pages associated with each portion of the record's contents. No remedial action is necessary.

#### 15. Extent of Condition (continued)

The prefix "USW" (Underground Southern Nevada Waste) and "UE" (Underground Exploratory) associated with most borehole nomenclature, identifies the location of the borehole as being outside the boundary of the Nevada Test Site (NTS), or within the NTS boundary, respectively. Both the USW and the UE prefix are actually unnecessary in that the remainder of the borehole nomenclature is unique to each borehole whether or not the borehole is on or off the NTS. It is necessary to understand that the uniqueness of each borehole identifier is within the letters used to describe the use of the hole and the accompanying sequential number. The uniqueness of borehole identification numbers are independent of spaces, hyphens, or other characters such as the # symbol. The prescribed identification format for each borehole located within the NTS is as follows:

USW, followed by a space, followed by one or more upper case letters describing the use of the hole, followed by a hyphen and a sequential number.

The prescribed identification format for each borehole located outside the NTS is as follows:

UE, followed by a hyphen and the NTS area number in which the borehole is located, followed by one or more upper or lower case numbers describing the use of the hole, followed by the number (#) character and a sequential number.

With this information in mind, an evaluation of the borehole identifier inconsistencies specified in the DR is as follows:

<u>TDIF Annotation</u>	<u>Data Submittal Annotation</u>	<u>Comment</u>
UE-25-WT11	USW-WT-11	Since the UE & the USW indicator are not necessary to identify this borehole, the only inconsistency is the hyphen between the WT and the 11. The unique identification numbers for boreholes are not space or hyphen sensitive. Either way, this annotation is recognized by the technical community as identifying the same borehole, WT-11.
UE-25 UZ#16	USW UZ-16	The unique attributes of this identifier are the UZ and the 16. The identifier is not # character or hyphen sensitive.
USW UZ-N11 USW UZ-N15 USW UZ-N16	UZN-11 UZN-15 UZN-16	The unique attributes of these identifiers are the UZN and the numbers 11, 15, 16. The identifiers are not space or hyphen sensitive.

# STANDARDIZED BOREHOLE IDENTIFICATION LIST

BOREHOLE NAME
U-25 Seismic #1
U-25 Seismic #10
U-25 Seismic #11
U-25 Seismic #12
U-25 Seismic #13
U-25 Seismic #14
U-25 Seismic #15
U-25 Seismic #16
U-25 Seismic #17
U-25 Seismic #18
U-25 Seismic #19
U-25 Seismic #2
U-25 Seismic #20
U-25 Seismic #21
U-25 Seismic #22
U-25 Seismic #23
U-25 Seismic #24
U-25 Seismic #3
U-25 Seismic #4
U-25 Seismic #5
U-25 Seismic #7
U-25 Seismic #8
U-25 Seismic #9
U-25 TC #1
U-25 TC #2
U-25 TC #3
U-25 TC #4
U-25 TCI #1
U-25 TCI #2
U-25 TCI #3
U-25 TCI #4
U-26 Seismic #1
U-29 Seismic #1
U-30 Seismic #1
U-30 Seismic #2
U-5 Seismic #1
U-5 Seismic #2
UE-22 ARMY #1
UE-25 a #1
UE-25 a #3
UE-25 a #4
UE-25 a #5
UE-25 a #6

BOREHOLE NAME
UE-25 a #7
UE-25 b #1
UE-25 c #1
UE-25 c #2
UE-25 c #3
UE-25 h #1
UE 25 J-11
UE-25 J-11Prime
UE-25 J-12
UE-25 J-13
UE-25 JF #3
UE-25 NRG #1
UE-25 NRG #2
UE-25 NRG #2a
UE-25 NRG #2b
UE-25 NRG #2c
UE-25 NRG #2d
UE-25 NRG #3
UE-25 NRG #4
UE-25 NRG #5
UE-25 ONG #1
UE-25 p #1
UE-25 PSF #7
UE-25 PTH #1
UE-25 PTH #2
UE-25 PTH #3
UE-25 PTH #4
UE-25 PTH #5
UE-25 PTH #6
UE-25 RF #1
UE-25 RF #10
UE-25 RF #11
UE-25 RF #2
UE-25 RF #3
UE-25 RF #3B
UE-25 RF #4
UE-25 RF #5
UE-25 RF #7
UE-25 RF #7A
UE-25 RF #8
UE-25 RF #9
UE-25 SR #1
UE-25 SR #2
UE-25 SR #3

BOREHOLE NAME
UE-25 UZ #16
UE-25 UZ #4
UE-25 UZ #5
UE-25 UZN #1
UE-25 UZN #10
UE-25 UZN #12
UE-25 UZN #13
UE-25 UZN #14
UE-25 UZN #18
UE-25 UZN #19
UE-25 UZN #2
UE-25 UZN #20
UE-25 UZN #21
UE-25 UZN #22
UE-25 UZN #23
UE-25 UZN #28
UE-25 UZN #29
UE-25 UZN #3
UE-25 UZN #30
UE-25 UZN #39
UE-25 UZN #4
UE-25 UZN #5
UE-25 UZN #58
UE-25 UZN #6
UE-25 UZN #60
UE-25 UZN #63
UE-25 UZN #7
UE-25 UZN #8
UE-25 UZN #85
UE-25 UZN #9
UE-25 UZN #97
UE-25 UZNC #1
UE-25 UZNC #2
UE-25 WT #12
UE-25 WT #13
UE-25 WT #14
UE-25 WT #15
UE-25 WT #16
UE-25 WT #17
UE-25 WT #18
UE-25 WT #3
UE-25 WT #4
UE-25 WT #5
UE-25 WT #6

BOREHOLE NAME
UE-29 a #1
UE-29 a #2
UE-29 UZN #91
UE-29 UZN #92
US-25 #1
US-25 #10
US-25 #11
US-25 #12
US-25 #13
US-25 #14
US-25 #15
US-25 #16
US-25 #17
US-25 #18
US-25 #19
US-25 #2
US-25 #20
US-25 #21
US-25 #3
US-25 #4
US-25 #5
US-25 #6
US-25 #7
US-25 #8
US-25 #9
USW G-1
USW G-2
USW G-3
USW G-4
USW GA-1
USW GU-3
USW H-1
USW H-3
USW H-4
USW H-5
USW H-6
USW NRG-6
USW NRG-7
USW NRG-7a
USW SD-12
USW SD-7
USW SD-9
USW SRS-1
USW SRS-11

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# STANDARDIZED BOREHOLE IDENTIFICATION LIST

BOREHOLE NAME
USW SRS-201
USW SRS-203
USW SRS-205
USW SRS-205a
USW SRS-205b
USW SRS-207
USW SRS-208.5a
USW SRS-208.5b
USW SRS-211a
USW SRS-211b
USW SRS-3
USW SRS-300
USW SRS-302a
USW SRS-302b
USW SRS-305a
USW SRS-305b
USW SRS-307r
USW SRS-311
USW SRS-6
USW SRS-7
USW SRS-9
USW UZ-1
USW UZ-13
USW UZ-14
USW UZ-6
USW UZ-5a
USW UZ-7
USW UZ-7a
USW UZ-8
USW UZ-N11
USW UZ-N15
USW UZ-N16
USW UZ-N17
USW UZ-N24
USW UZ-N25
USW UZ-N28
USW UZ-N27
USW UZ-N31
USW UZ-N32
USW UZ-N33
USW UZ-N34
USW UZ-N35
USW UZ-N36
USW UZ-N37

BOREHOLE NAME
USW UZ-N38
USW UZ-N40
USW UZ-N41
USW UZ-N42
USW UZ-N43
USW UZ-N44
USW UZ-N45
USW UZ-N46
USW UZ-N47
USW UZ-N48
USW UZ-N49
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USW UZ-N66
USW UZ-N67
USW UZ-N68
USW UZ-N69
USW UZ-N70
USW UZ-N71
USW UZ-N72
USW UZ-N73
USW UZ-N74
USW UZ-N75
USW UZ-N76
USW UZ-N77
USW UZ-N78
USW UZ-N79
USW UZ-N80
USW UZ-N81
USW UZ-N82
USW UZ-N83
USW UZ-N84
USW UZ-N86

BOREHOLE NAME
USW UZ-N87
USW UZ-N88
USW UZ-N89
USW UZ-N90
USW UZ-N93
USW UZ-N94
USW UZ-N95
USW UZ-N96
USW UZ-N98
USW VH-1
USW VH-2
USW WT-1
USW WT-10
USW WT-11
USW WT-2
USW WT-7

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VERIFICATION OF CORRECTIVE ACTIONS FOR DR YM-96-D-100

Verification of corrective actions for DR YM-96-D-100 was performed on October 2, 1997. M&O letter LV.RO.JLY.09/97-048 to Distribution from L. D. Foust dated September 29, 1997 transmitted standardized borehole identifier cross reference table to the Records Processing Center and appropriate scientific programs personnel. Additionally, the GENISES database has been updated with the standardized identifiers. This was verified through accessing the database on the M&O intranet. The database was updated effective October 2, 1997. Based on the reviews of the applicable documentation and updated GENISES database, it is recommended that DR YM-96-D-100 be closed.

Evaluation by



Pat Auer

QAR 10/2/97