

CCP-TP-506

Revision 2

CCP Preparation of the Remote-Handled Transuranic Waste Acceptable Knowledge Characterization Reconciliation Report

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PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	04/28/2006	Initial issue.
1	05/05/2006	Revised to address Carlsbad Field Office (CBFO) Document Review Record (DRR) comments.
2	06/08/2006	Revised to reference the correct line numbers for completing the attachments.

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1.0 PURPOSE

Prior to shipment of Remote-Handled (RH) Transuranic (TRU) waste, the Central Characterization Project (CCP) will reconcile the data in accordance with the requirements of DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan* (WCPIP). Data reconciliation is required in order for the Site Project Manager (SPM) to complete the Acceptable Knowledge (AK) Characterization Reconciliation Report (CRR).

1.1 Scope

This procedure provides the methodology for data reconciliation with the Data Quality Objectives (DQOs) provided in the WCPIP, following data validation and verification by the SPM. This reconciliation is performed at the waste stream or waste stream lot level. This procedure provides instructions for the completion of the CRR. The CRR for an RH TRU waste stream shall be submitted to the U.S. Department of Energy (DOE)/Carlsbad Field Office (CBFO) for approval prior to shipment of that RH TRU waste stream to the Waste Isolation Pilot Plant (WIPP).

2.0 REQUIREMENTS

2.1 References

Baseline Documents

- *Waste Isolation Pilot Plant Land Withdrawal Act* (Public Law 102-579)

Referenced Documents

- DOE/WIPP 02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan*
- DOE/WIPP 94-1012, *Quality Assurance Program Document*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- CCP-QP-002, *CCP Training and Qualification Plan*
- CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-008, *CCP Records Management*
- CCP-TP-005, *CCP Acceptable Knowledge Documentation*

2.2 Training Requirements

2.2.1 Personnel performing this procedure will be trained and qualified in accordance with CCP-QP-002, *CCP Training and Qualification Plan*, prior to performing this procedure.

2.3 Equipment List

2.3.1 None.

2.4 Precautions and Limitations

2.4.1 None.

2.5 Prerequisite Actions

2.5.1 Ensure the AK Summary Report for the subject waste stream of the CRR is approved.

2.6 Definitions

2.6.1 None.

3.0 RESPONSIBILITIES

NOTE

Implementation of this procedure requires four positions as follows: Acceptable Knowledge Expert (AKE), CCP Records Custodian, Site Project Quality Assurance Officer (SPQAO), and SPM.

3.1 Site Project Quality Assurance Officer (SPQAO)

- 3.1.1 Reviews the AK Summary Report, confirmatory test data, and identified AK discrepancies and prepares an AK Accuracy Report.

3.2 Site Project Manager (SPM)

- 3.2.1 Ensures that all data generated and used in decision making meet the DQOs provided in the WCPIP.

- [A] Assesses whether data of sufficient type, quality, and quantity have been collected.

- [B] Determines that all DQOs and Quality Assurance Objectives (QAOs) have been met.

- [C] Documents DQO and QAO compliance in the CRR and provides the CRR to DOE/CBFO prior to shipment of the waste to the WIPP.

3.3 Acceptable Knowledge Expert (AKE)

- 3.3.1 Compiles the AK information for the waste stream being characterized.

- 3.3.2 As the waste stream is characterized, confirms the AK information with the characterization data collected.

- 3.3.3 For the completion of the CRR (conducted in accordance with this procedure), provides assistance to the SPM.

- 3.3.4 Reviews the CRR.

3.3.5 Provides a signature release on Attachment 5, Remote-Handled Characterization Reconciliation Report Cover Sheet EXAMPLE, verifying that the AK information contained in the CRR is correct.

3.4 CCP Records Custodian

3.4.1 Provides records requested by the SPM and AKE during the generation of the CRR in accordance with CCP-QP-008, *CCP Records Management*.

3.4.2 Receives and processes all records generated by this procedure in accordance with CCP-QP-008.

4.0 PROCEDURE

4.1 Establishing CRR Scope

SPM

NOTE

The CRR scope is an objective determination based on the size of the waste stream and the number of containers for which characterization has been completed and which are available to be included in the CRR.

4.1.1 Determine which containers will be included in the CRR.

4.1.2 Identify the data necessary to complete the CRR (e.g., AK Summary Report, Confirmatory Test Plan applicable to the waste stream, Batch Data Reports [BDRs], source documents), **AND** request any necessary documents from the CCP Records Custodian in accordance with CCP-QP-008.

CCP Records Custodian

4.1.3 Provide SPM with copies of any documents requested.

SPM

NOTE

The CRR number is a unique sequential number (e.g., CRR-ANLE-AERHDM-0001) that will identify the CRR, site, and waste stream.

4.2 RH CRR Container Data Work Sheet 1 (Attachment 1)

4.2.1 General Information

[A] Record information for container on Lines 1 through 19, **AND** reference the source.

4.3 RH CRR Container Data Work Sheet 2 (VE/RTR) (Attachment 2)

4.3.1 Correlation Between Attachments

NOTE

Lines 20 through 24 are automatically populated by the link from Attachment 1.

- [A] Record information for container on Lines 25 through 29, **AND** reference source.

4.4 RH CRR Data Quality Objectives (DQOs) (Attachment 3)

4.4.1 Correlation Between Attachments

NOTE

Lines 30 through 32 are automatically populated by the link from Attachment 1.

- [A] Record information (qualification method [e.g., data record, peer review]) for waste stream on Lines 33 through 58, **AND** list the supporting documentation and resolution for DQOs.
- [B] **IF** the DQO for any category has **NOT** been met, **THEN** generate a nonconformance report (NCR) in accordance with CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*.

4.5 RH CRR Quality Assurance Objectives (QAOs) (Attachment 4)

4.5.1 Correlation Between Attachments

NOTE

Lines 59 through 61 are automatically populated by the link from Attachment 1.

NOTE

The sources requested to complete Attachment 4 include, but are not limited to, citing the AK section, citing the AK source documents, citing the BDR Number, sampling plan or any other data or information used to determine that the QAO has been met.

4.5.2 AK Evaluation of QAO

[A] Reference Table 4.1, Quality Assurance Objectives (QAOs) by Method for definition of Precision, Accuracy, Representativeness, Completeness, Comparability, determine if the QAOs for AK have been met, **AND** indicate the answers on Lines 62 through 66 (CCP-PO-002, *CCP Transuranic Waste Certification Plan*).

4.5.3 VE Method Evaluation of QAOs

[A] Reference Table 4.1, determine if the QAOs for AK have been met, **AND** indicate the answers on Lines 67 through 71 (CCP-PO-002).

4.5.4 Dose-to-Curie Conversion Evaluation of QAOs

[A] Reference Table 4.1, determine if the QAOs for AK have been met, **AND** indicate the answers on Lines 72 through 76 (CCP-PO-002).

4.5.5 Radiography Evaluation of QAOs

[A] Reference Table 4.1, determine if the QAOs for AK have been met, **AND** indicate the answers on Lines 77 through 81 (CCP-PO-002).

4.5.6 NDA Evaluation of QAOs

[A] Reference Table 4.1, determine if the QAOs for AK have been met, **AND** indicate the answers on Lines 82 through 86 (CCP-PO-002).

4.5.7 Destructive Assay Evaluation of QAOs

[A] Reference Table 4.1, determine if the QAOs for AK have been met, **AND** indicate the answers on Lines 87 through 91 (CCP-PO-002).

4.5.8 Surface Dose Rate Evaluation of QAOs

[A] Reference Table 4.1, determine if the QAOs for AK have been met, **AND** indicate the answers on Lines 92 through 96 (CCP-PO-002).

4.5.9 Sampling Methodologies Evaluation of QAOs

[A] Reference Table 4.1, determine if the QAOs for AK have been met, **AND** indicate the answers on Lines 97 through 101 (CCP-PO-002).

4.5.10 **IF** the QAOs have **NOT** been met,
THEN generate an NCR in accordance with CCP-QP-005.

4.5.11 Provide an explanation for answers that contain N/A [not applicable] in the source field.

4.6 RH CRR Cover Sheet (Attachment 5)

4.6.1 Correlation Between Attachments.

NOTE

Lines 102 through 106 are automatically populated by the link from Attachment 1.

[A] Record information for the waste stream on Lines 107 through 131.

[B] Discuss any remediation activity or other relevant information in the Visual Examination/Real-Time Radiography (VE/RTR) Summary Results.

4.7 RH CRR Container Continuation Sheet (Attachment 6)

4.7.1 Use Attachment 6 for additional information needed for any line item from Attachments 1 through 5.

4.8 RH CRR SPM/AKE Comments Sheet (Attachment 7)

NOTE

Attachment 7 need **NOT** be completed if NO comments are desired.

4.8.1 Indicate any comments, clarifications, additional information necessary on Attachment 7.

4.9 Summary of Radiological Results by Container Number (Attachment 8)

NOTE

The TRU Container Activity field in Attachment 8 is a logical field populated based on the values entered in the attachment.

4.9.1 Complete Attachment 8 for each payload container by identifying the container number, associated BDR number, method used to confirm radiological data, TRU activity and associated Total Measurement Uncertainty (TMU).

4.9.2 Record any additional information for radiological data in the Comments section.

4.10 RH CRR Completion

NOTE

Attachments 1 and 2 are supplemental information for each container. Include Attachments 1 and 2 will be submitted to the Records Custodian only.

4.10.1 Complete the CRR, which consists of (in this order):

- Attachment 5
- Table of Contents
- Attachment 7 (if applicable)
- Attachment 8
- Attachment 3
- Attachment 4
- Attachment 6 (where applicable)
- A complete copy of the AK Summary Report for the waste stream
- Listing of AK discrepancies generated by an AK Qualification process and the corresponding resolutions

4.10.2 Paginate the CRR.

4.10.3 Submit the CRR to the AKE for review.

AKE

4.10.4 Review the CRR.

4.10.5 Identify any errors or omissions in references or other AK-related entries.

4.10.6 Notify the SPM of identified errors and omissions.

4.10.7 Provide any comments on Attachment 7.

[A] Print name, sign and date Attachment 7.

SPM/AKE

4.10.8 Resolve any questions identified during AKE review.

AKE

4.10.9 List any discrepancies during resolution in the SPM/AKE/SPQAO
Comments section on Attachment 7.

NOTE

The AKE's signature on Attachment 5 (Cover Sheet) indicates that the AKE has reviewed the CRR and concurs with the findings and the references related to AK. All issues identified by the AKE during review have been resolved.

4.10.10 Print name, sign, and date Attachment 5 (Cover Sheet).

4.10.11 Submit the CRR to the SPQAO.

NOTE

The SPQAO's signature indicates that the SPQAO has reviewed the AK Summary Report, confirmatory test data, notes, any AK discrepancies, and that any issues identified have been resolved.

SPQAO

4.10.12 Identify any errors or omissions in references or other AK
related entries.

4.10.13 Notify the SPM of identified errors and omissions.

4.10.14 Provide any comments on Attachment 7.

[A] Print name, sign and date Attachment 7.

4.10.15 Review the AK Summary Report, confirmatory test data, notes
and identified AK discrepancies.

4.10.16 Resolve comments with SPM.

4.10.17 Prepare an AK Accuracy Report in accordance with
CCP-TP-005, *CCP Acceptable Knowledge Documentation*.

4.10.18 Print name, sign, and date Attachment 5.

4.10.19 Submit the CRR to the SPM.

SPM

4.10.20 Resolve any questions identified during SPQAO review.

NOTE

The SPM's signature indicates that the SPM has either prepared the document personally or had responsible charge of the preparation and verifies that the information is correct. All issues identified by the AKE/SPQAO have been resolved.

SPM

4.10.21 Print name, sign, and date Attachment 5.

4.10.22 Prepare transmittal letter to DOE/CBFO.

4.10.23 Provide a copy of CRR, DOE/CBFO transmittal letter, and Attachments 1 and 2 to the CCP Records Custodian.

4.10.24 Transmit the CRR to DOE/CBFO.

CCP Records Custodian

4.10.25 Receive and process records generated by this procedure in accordance with CCP-QP-008 once CBFO has provided approval.

5.0 RECORDS

5.1 Records generated during the performance of this procedure are maintained as quality assurance (QA) records in accordance with CCP-QP-008, The records are the following:

5.1.1 QA/Lifetime

[A] CRR:

[A.1] Attachment 1, Remote-Handled Characterization Reconciliation Report Container Data Work Sheet 1

[A.2] Attachment 2, Remote-Handled Characterization Reconciliation Report Container Data Work Sheet 2 (VE/RTR)

[A.3] Attachment 3, Remote-Handled Characterization Reconciliation Report Data Quality Objectives (DQOs)

[A.4] Attachment 4, Remote-Handled Characterization Reconciliation Report Quality Assurance Objectives (QAOs)

[A.5] Attachment 5, Remote-Handled Characterization Reconciliation Report Cover Sheet

[A.6] Attachment 6, Remote-Handled Characterization Reconciliation Report Container Continuation Sheet

[A.7] Attachment 7, Remote-Handled Characterization Reconciliation Report SPM/AKE Comment Sheet

[A.8] Attachment 8, Summary of Radiological Results by Container Number

Table 4.1. Quality Assurance Objectives (QAOs) by Method

METHODS								
	AK	VE	Dose-to-Curie	Radiography	NDA	Destructive Assay	Surface Dose Rate	Sampling
Precision	Precision is the agreement among a set of replicate measurements without assumption of the knowledge of a true value. The qualitative determinations, such as compiling and assessing AK documentation, do not lend themselves to statistical evaluations of precision. Therefore, a precision requirement is NOT established for AK.	Precision is maintained by reconciling any discrepancies between two operators (or between the operator and the independent technical reviewer) with regard to the identification of important waste characteristics (i.e., physical form of the waste and absence of residual liquid in excess of one percent by volume) within a single container. Any container with unreconciled discrepancies can NOT be shipped to the WIPP.	Precision shall be established and maintained within the recommendations of the manufacturer of the dose-rate instrument used. This will be demonstrated by a satisfactory source check of the instrument prior to obtaining dose rate measurements. The precision of the instrument shall be documented and factored into the TMU [Total Measurement Uncertainty] determined for the overall method.	Precision is maintained by reconciling any discrepancies between two operators with regard to the identification of important waste characteristics (i.e., physical form of the waste and absence of residual liquid in excess of one percent by volume) within a single container. Any container with unreconciled discrepancies can NOT be shipped to the WIPP.	Precision is reported as %RSD [percent relative standard deviation]. The %RSD shall NOT exceed the values listed in Table 4.2, Upper Limits for %RSD vs. Number of Replicates.	Precision is reported as RPD [Relative Percent Difference]. The RPD is derived from analysis of laboratory duplicates as listed in Table 4.3, Quality Control Requirements for Radiochemistry. The RPD shall NOT exceed the values listed in Table 4.3.	Precision is established and maintained within the recommendations of the manufacturer of the instrument used to measure dose.	Sampling precision is established by comparing the RPD between duplicate samples. A nonconformance report (NCR) shall be issued for any duplicate samples with RPDs greater than 25%.

Table 4.1. Quality Assurance Objectives (QAOs) by Method (Continued)

METHODS								
	AK	VE	Dose-to-Curie	Radiography	NDA	Destructive Assay	Surface Dose Rate	Sampling
Accuracy	Accuracy is the degree of agreement between an observed sample result and the true value. The percentage of waste containers which require reassignment to a new SCG [Summary Category Group] or new waste stream based on the reevaluation of AK or on obtaining testing, sampling and/or analysis data will be reported as a measure of AK accuracy. The sites shall, in addition, develop a methodology to compare radionuclide information from confirmation with the information in the AK record and address significant discrepancies. What constitutes a significant discrepancy will depend on site and waste stream-specific considerations. If AK accuracy falls below 90%, the site shall document this as a significant condition adverse to quality as defined by the DOE/CBFO 94-1012, <i>Quality Assurance Program Document</i> (QAPD). The site shall notify the DOE/CBFO of this condition and implement appropriate corrective actions before proceeding with further characterization activities on the affected waste stream(s).	Accuracy is maintained by requiring operators to pass a comprehensive examination with a score of 80% and demonstrate satisfactory performance in the presence of the VE Expert during the initial qualification and subsequent requalification.	Calibration shall be established and maintained within the recommendations of the manufacturer of the dose-rate instrument used. The accuracy of the instrument shall be documented and factored into the TMU determined for the overall method.	Accuracy is obtained by using a target to tune the image for maximum sharpness and by requiring operators to successfully identify 100 percent of the items in a training container during their initial qualification and subsequent requalification.	Accuracy is reported as %R [percent recovery]. Accuracy will not exceed $\pm 30\%$ on a non-interfering matrix.	Accuracy is reported as %R. The %R is derived from analysis of laboratory control samples and matrix spikes as listed in Table 4.3. The % R shall NOT exceed the values listed in Table 4-3.	Calibration [is] established and maintained within the recommendations of the manufacturer of the dose measurement instrument used.	Sampling accuracy through the use of standard reference materials shall not be measured. Because waste containers containing RH TRU waste with known quantities of radionuclides are not available, sampling accuracy cannot be determined. Sampling accuracy as a function of sampling cross-contamination will be measured. Sampling equipment will be verified as clean by the use of standard radiological control survey methods.

Table 4.1. Quality Assurance Objectives (QAOs) by Method (Continued)

METHODS								
	AK	VE	Dose-to-Curie	Radiography	NDA	Destructive Assay	Surface Dose Rate	Sampling
Representativeness	Representativeness is the degree to which sample data accurately and precisely represent characteristics of a population. Representativeness is a qualitative parameter that will be satisfied by ensuring that the process of obtaining, evaluating, and documenting AK information is performed in accordance with the minimum standards established in Attachment A, Acceptable Knowledge Procedure for Remote-Handled TRU Waste of the WCCIP.	The contents placed in a container will be described on the data forms.	Representativeness of the isotopic distributions will be confirmed by sampling in accordance with an approved sampling plan (see Section 4.1.8 of the WCCIP). The representativeness of the sampling shall be documented and factored into the TMU determined for the overall method.	All of the relevant contents in a container selected for radiography will be described.	Representativeness is ensured through assay of each waste container when NDA is used to satisfy DQOs.	Representativeness of Destructive Assay (DA) data shall be achieved by the collection of unbiased samples.	The measurement [is] applied to the entire waste container.	A sampling plan must be developed by the RH TRU generator site that describes the sampling strategy for obtaining representative samples.

Table 4.1. Quality Assurance Objectives (QAOs) by Method (Continued)

METHODS								
	AK	VE	Dose-to-Curie	Radiography	NDA	Destructive Assay	Surface Dose Rate	Sampling
Completeness	Completeness is an assessment of the number of waste streams or number of samples collected compared to the number of samples determined to be useable through the data validation process. The AK record shall contain 100% of the information specified in Attachment A of the WCCIP. The usability of the AK information will be assessed for completeness during audits.	The relevant waste information must be collected. The information must be documented on a videotape and/or data form, or other unalterable media.	Completeness is verified by measuring the dose rate for every container. The sites must verify that the measured dose rate is at least 10 times greater than background.	All of the relevant waste information must be assembled and must show that each of the containers in the waste stream belong to the waste stream. The information must be documented on videotape or other equivalent media and data form.	Required completeness is 100%. All NDA data used to satisfy a DQO must be valid and usable.	Completeness of DA data shall be expressed as the ratio of the number samples that are analyzed with valid results to the total number of samples that are submitted for analysis, expressed as a percent. Acceptable DA data shall be obtained for 90 percent of the samples acquired for waste characterization. Valid results for radioassay data are those that were obtained when the laboratory or testing facility demonstrated that the instrumentation and method were in control.	100% of the measurements needed to determine surface dose rate are performed and useable.	Sampling completeness shall be expressed as the number of valid samples collected as a percent of the total number of samples collected for each waste stream. The participating sampling facilities are required to achieve a minimum 90 percent completeness.

Table 4.1. Quality Assurance Objectives (QAOs) by Method (Continued)

METHODS								
	AK	VE	Dose-to-Curie	Radiography	NDA	Destructive Assay	Surface Dose Rate	Sampling
Comparability	Data are considered comparable when one set of data can be compared to another set of data. Comparability is ensured through sites meeting the training requirements and complying with the minimum standards outlined for procedures that are used to implement the AK process.	Comparability is ensured by a site meeting the training requirements and complying with the minimum standards used to implement this characterization process. In some instances, waste will be contained in opaque containers and not all items will be visible to the operator (e.g., sealed paint cans or 5-gallon buckets). If these containers are NOT opened during VE, source documents must be available in the AK record that allows the operator to identify the contents of the closed containers.	Standardized instructions must be used in designing and implementing the measurement program.	Comparability is ensured through a site meeting the training requirements and complying with the minimum standards used to implement the radiography process.	Comparability is ensured through a site meeting the training requirements and complying with the minimum standards used to implement the NDA process.	Comparability is ensured through a site meeting the training requirements and complying with the minimum standards used to implement the DA process.	Dose rate measurements are performed by site health physics personnel in accordance with the DOE Orders governing radiological control.	Compliance with the requirements of Section [4.1.8] of the WCPIP will ensure comparability between RH TRU waste generator sites.

Table 4.2. Upper Limits for %RSD vs. Number of Replicates

Number of Replicates	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Max %RSD	1.8	6.6	10.0	12.3	14.0	15.2	16.2	17.1	17.7	18.3	18.8	19.3	19.7	20.0

Table 4.3. Quality Control Requirements for Radiochemistry

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action
Laboratory control samples (LCS)	One per analytical batch	75% to 125%R	See Laboratory Control Sample ^a
Method blank	One per analytical batch	Site-specific statistical control limits	See Method Blanks ^b
Laboratory duplicate	One per analytical batch	RPD 40	See Laboratory Duplicate ^c
Matrix spike (MS)	One per analytical batch for ICP-MS, as required by the test performed	50 to 150%R	See Matrix Spike and Matrix Spike Duplicate ^d
Matrix spike duplicate (MSD)	One per analytical batch, as required by the test performed	50 to 150%R RPD 40	See Matrix Spike and Matrix Spike Duplicate ^d
Radioisotopic tracers	Every sample	Site-specific statistical control limits	See Radioisotopic Tracer ^e

^a**Laboratory Control Sample (LCS):** An LCS is analyzed at least once per analytical batch. If a solid matrix with established control limits is used as the LCS, the established limits may be used for the acceptance criteria. The control limits will meet the criteria in Table 4-4.

^b**Method Blanks:** A method blank is analyzed at least once per analytical batch. It contains all reagents in proportions equal to those in the samples and is carried through the analytical procedure to identify if contamination is present. Each site establishes the acceptance criteria for method blanks; if they are expressed as statistical control limits they shall meet the requirements in Table 4-4. Criteria may be absolute values, multiples of background variation, fractions of activity concentrations observed in samples, or other appropriate units.

^c**Laboratory Duplicates:** A laboratory duplicate is analyzed at least once per analytical batch. A laboratory duplicate is a separate aliquot from the same field sample carried through the entire analytical procedure. The RPD between duplicate results is compared with the criteria.

^d**Matrix Spike and Matrix Spike Duplicate:** Duplicate MSs on individual field samples are performed for inductively couple plasma-mass spectrometry (ICP-MS) analysis at a minimum frequency of one pair (MS plus MSD) per analytical batch. The MSDs are preferred for any analytical procedure not using radioactive tracers. The MS and MSD results are acceptable if the criteria given above for percent recovery and RPD are met.

^e**Radioisotopic Tracer:** Some methods require that all samples, blanks, LCSs, and laboratory duplicates be spiked with radioisotopic tracers to determine chemical recoveries, counting efficiencies, or a combination thereof. Each site establishes the acceptance criteria for method blanks; if they are expressed as statistical control limits they shall meet the requirements in Table 4-4.

Table 4.4. Statistical Control Limits

	Acceptability Range	Required Response
Acceptable Range	Data ^b $2\sigma^a$	No action required.
Warning Range	$2\sigma^a < \text{Data} < 3\sigma^a$	The QC measurement shall be run no more than twice. If the rerun QC measurement results in data within $\pm 2\sigma$, then the QC measurements shall be documented and work may continue. If the system does not fall within $\pm 2\sigma$ after two QC measurements, then the required response for the Action Range shall be followed.
Action Range	Data $> 3\sigma^a$	Work shall stop and the occurrence shall be documented and appropriately dispositioned (e.g., initiating an NCR). The measurement system shall be removed from service pending successful resolution of all necessary actions, and all assays performed since the last acceptable QC measurement are suspect, pending satisfactory resolution.

^a σ – The standard deviation is only based on the reproducibility of the data check measurements themselves. This is not TMU.

^b – Absolute Value

Attachment 1 – Remote-Handled Characterization Reconciliation Report Container Data
Work Sheet 1 EXAMPLE

line #				Source		
1	CRR Number	CRR-ANLE-AGHCF-S5000-001		AGHCF (Alpha Gamma Hot Cell Facility)		
2	Container Number	743				
3	Site	INL		Waste generated at ANLE		
4	Waste Stream	ID-ANLE-S5000		CCP-AK-INL-500 Rev. 1		
5	Waste Matrix Code	not assigned as of 5/2/06		not available		
6	Summary Category Group	S5000 - Debris Waste		CCP-AK-INL-500 Rev. 1		
7	Radiological BDR number(s)	Dose to Curie INL060314				
8	VE BDR Number	RHINLVE060001				
9	NDE BDR Number	N/A				
10	Waste Stream Profile Number	not assigned as of 5/2/06				
PRINT						
		Identify Confirmatory Testing Methods	List Confirmatory Test Plan Document Number			
11		Radiological Characterization Technical Report	CCP-AK-INL-501	LANL ICP-MS Dose-to-Curie Methodology		
12						
13						
14						
15						
16						
17						
18						
19	Were alternative methods of confirmatory testing not listed above used to qualify AK?		<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	VE using video tape

Attachment 2 – Remote-Handled Characterization Reconciliation Report Container Data
Work Sheet 2 (VE/RTR) EXAMPLE

line #					
20	GRR Number	CRR-ANLE-AGHCF-S5000-001			
21	Container Number	743			
22	Site	INL			
23	Waste Stream	ID-ANLE-S5000			
24	Summary Category Group	S5000 - Debris Waste			
	Waste Stream VE/RTR Information		SOURCE		
25	How many containers are identified in the waste stream/lot which includes this container?	549	CCP-AK-INL-500 Rev. 1		
	Container Specific VE/RTR Information		SOURCE		
26	Was this container packaged or re-packaged as a result of prohibited item?		<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no	<input type="checkbox"/> NA
27	Did the contents of the container match the waste stream description?	RHINLVE060001	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA
	Prohibited Items				
	Liquids				
28	Did this container include any liquids?		<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no	<input type="checkbox"/> NA
29	If the container included liquids, did these liquids exceed 1% of the volume of the waste container?		<input type="checkbox"/> yes	<input type="checkbox"/> no	<input checked="" type="checkbox"/> NA

Attachment 3 – Remote-Handled Characterization Reconciliation Report Data Quality Objectives (DQOs) EXAMPLE

line #					List the Qualification Method and Supporting Sources of DQO	AK discrepancy/ resolutions relevant to DQO
30	CRR Number	CRR-INL-AGHCF-S5000-001				
31	Site	INL				
32	Waste Stream	ID-ANLE-S5000				
	DQO					
33	Defense Waste Determination	Is the waste stream identified in AK?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	CCP-AK-INL-500, Rev. 2	None
34		According to AK, was the Waste generated by defense activities?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	CCP-AK-INL-500, Rev. 2, Section 4.1.4	None
35		What is the source of the information regarding the Defense Determination?			CCP-AK-INL-500, Rev. 2, Section 4.1.4	None
36		Has the DQO been met? <small>RH Tru Waste Characterization Program Implementation Plan Section 2.2.1.</small>	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	CCP-AK-INL-500, Rev. 2, Section 4.1.4	None
37	TRU Waste Determination	Is the TAAC greater than 100nCi/g for all containers?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	INLRHDT06001 Waste Container Dose-to-Curie Conversion Record sheets	None
38		How was TRU Alpha Activity Concentration (TAAC) determined?			INLRHDT06001 Waste Container Dose-to-Curie Conversion Record sheets	None
39		Is the Lower Limit of detection of the instrument and method used to determine the TAAC 100nCi/g or less?	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input checked="" type="checkbox"/> NA	LLD is not established for probes utilized for Dose-to-Curie
40		Is the waste in this waste stream TRU Waste?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	INLRHDT06001 Waste Container Dose-to-Curie Conversion Record sheets	None
41		What is the source of the information regarding the TAAC?			INLRHDT06001 Waste Container Dose-to-Curie Conversion Record sheets	None
42		Has the DQO been met? <small>RH Tru Waste Characterization Program Implementation Plan Section 2.2.2.1.</small>	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	INLRHDT06001 Waste Container Dose-to-Curie Conversion Record sheets	None

Attachment 3 – Remote-Handled Characterization Reconciliation Report Data Quality Objectives (DQOs) EXAMPLE (Continued)

	DQO				List the Qualification Method and Supporting Sources of DQO	AK discrepancy/ resolutions relevant to DQO
43	RH Waste Determination	Is the surface dose rate greater than 200 mrem/hr for all containers in this waste stream?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Radiological Survey Report 441.45 Rev. 3	None
44		Is the surface dose rate less than or equal to 1000 rem/hr for all containers in this waste stream?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Radiological Survey Report 441.45 Rev. 3	None
45		Does the calibration of the instrument used to measure the surface dose meet the requirements of the QAPD?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	need	None
46		What is the source of the information regarding the surface dose rate?			Provided by INL Radioloical program	None
47		Has the DQO been met? RH Tru Waste Characterization Program Implementation Plan Section 2.2.2.2.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Radiological Survey Report 441.45 Rev. 3; Training records; instrument calibration records	None

Attachment 3 – Remote-Handled Characterization Reconciliation Report Data Quality Objectives (DQOs) EXAMPLE (Continued)

DQO				List the Qualification Method and Supporting Sources of DQO	AK discrepancy/ resolutions relevant to DQO
48	Total Activity Determination	Is the activity plus two times the TMU less than or equal to 23 Ci/L for each payload container in this waste stream? <small>Maximum of 4788 Ci per 55 gal. drum.</small>	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	INLRHDT06001 Waste Container Dose-to-Curie Conversion Record sheets	None
49		What is the source of the information regarding the activity?		INLRHDT06001 Waste Container Dose-to-Curie Conversion Record sheets	None
50		Has the DQO been met? <small>RH Tru Waste Characterization Program Implementation Plan Section 2.2.2.3.</small>	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no		None
51	Residual Liquids	Are there residual liquids in the waste?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	RHINLVE060001 Visual Examination data sheet	None
52		What is the approximate volume of the residual liquid? <small>If none indicate none.</small>		units No liquids identified in containers	None
53		Do any residual liquids exceed 1% of the volume of the container? <small>If no residual liquids indicate NA.</small>	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> NA	No liquids identified in containers	None
54		What is the source of the information regarding residual liquids (i.e. AK, RTR, VE)?		RHINLVE060001 Visual Examination data sheet	None
55		Has the DQO been met? <small>RH Tru Waste Characterization Program Implementation Plan Section 2.2.3.1.</small>	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no		None
56	Physical Form	Has the Cellulose, Plastic, and Rubber (CPR) been submitted for determining the physical form of the waste?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	RHINLVE060001 Visual Examination data sheet	None
57		Has the information on the type and number of containers, waste forms, processes and materials that produced the waste been submitted?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	RHINLVE060001 Visual Examination data sheet; CCP-AK-INL-500, Rev. 2	None
58		Has the DQO been met? <small>RH Tru Waste Characterization Program Implementation Plan Section 2.2.3.2.</small>	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	RHINLVE060001 Visual Examination data sheet; CCP-AK-INL-500, Rev. 2	None

Attachment 4 – Remote-Handled Characterization Reconciliation Report Quality Assurance Objectives (QAOs) EXAMPLE

Line #	Method	QAO	QAO met?			Procedure Section	Source	W/PIP Section
59	CRR Number	CRR-INL-AGHCF-S5000-001						
60	Site	INL						
61	Waste Stream	ID-ANLE-S5000						
62	AK	Precision	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input checked="" type="checkbox"/> NA	CCP-TP-506 Section 4.5.2	QAO not established for AK Precision	4.1.1.2
63		Accuracy	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.2		4.1.1.2
64		Representativeness	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.2		4.1.1.2
65		Completeness	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.2		4.1.1.2
66		Comparability	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.2		4.1.1.2
67	VE	Precision	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.3	RHINLVE060001 Attachment 1 Signature lines	4.1.2.3
68	Method	Accuracy	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.3	Training records (LOQI)	4.1.2.3
69	Does method apply?	Representativeness	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.3	RHINLVE060001 Attachment 1	4.1.2.3
70	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	Completeness	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.3	RHINLVE060001 Data Sheets	4.1.2.3
71		Comparability	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.3	Training	4.1.2.3
72	Dose to Curie	Precision	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.4	INLRHDTC06001 Attachment 1	4.1.3.2
73	Conversion	Accuracy	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.4		4.1.3.2
74	Does method apply?	Representativeness	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.4	INLRHDTC06001 Attachment 2	4.1.3.2
75	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	Completeness	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.4	INLRHDTC06001 Attachment 2	4.1.3.2
76		Comparability	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.4	CCP-TP-504	4.1.3.2
77	Radiography	Precision	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.5		4.1.4.3
78	Does method apply?	Accuracy	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.5		4.1.4.3
79	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	Representativeness	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.5		4.1.4.3
80		Completeness	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.5		4.1.4.3
81		Comparability	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.5		4.1.4.3
82	Nondestructive	Precision	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.6		4.1.5.1
83	Assay	Accuracy	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.6		4.1.5.1
84	Does method apply?	Representativeness	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.6		4.1.5.1
85	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	Completeness	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.6		4.1.5.1

Attachment 4 – Remote-Handled Characterization Reconciliation Report Quality Assurance Objectives (QAOs) EXAMPLE (Continued)

	Method	QAO	QAO met?			Procedure Section	Source	WCPIP Section
86		Comparability	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.6		4.1.5.1
87	Destructive	Precision	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.7		4.1.5.2
88	Assay	Accuracy	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.7		4.1.5.2
89	Does method apply?	Representativeness	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.7		4.1.5.2
90	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	Completeness	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.7		4.1.5.2
91		Comparability	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.7		4.1.5.2
92	Surface Dose	Precision	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.8	Johnson Extender 2000W Telescoping G-M Probe, Appendix A, Record of Calibration	4.1.6.2
93	Rate	Accuracy	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.8	Johnson Extender 2000W Telescoping G-M Probe, Appendix A, Record of Calibration and Picture of the calibration sticker on the instrument	4.1.6.2
94	Does method apply?	Representativeness	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.8		4.1.6.2
95	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	Completeness	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.8		4.1.6.2
96		Comparability	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.8	Employee qualification report for Cammy Montgomery	4.1.6.2
97	Sampling	Precision	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.9		4.1.8.2
98	Methodologies	Accuracy	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.9		4.1.8.2
99	Does method apply?	Representativeness	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.9		4.1.8.2
100	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	Completeness	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.9		4.1.8.2
101		Comparability	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> NA	CCP-TP-506 Section 4.5.9		4.1.8.2

Attachment 5 – Remote-Handled Characterization Reconciliation Report Cover Sheet
EXAMPLE

line #				
102	CRR Number	CRR-INL-AGHCF-S5000-001		
103	Waste Stream	ID-ANLE-S5000		
104	Site	INL		
105	Waste Matrix Code	not assigned as of 5/31/06		
106	Summary Category Group	S5000 - Debris Waste		
107	Have all DQOs been met?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	
108	Are any prohibited items present?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no	
109	Are any liquids present at greater than 1% of the volume of the container?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no	
110	Was AK qualified in accordance with the requirements of the WCPIP?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	
111	Are all containers Remote-handled TRU waste?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	
	List all container numbers used to generate the CRR	VE BDR #	RTR BDR #	Radiological BDR #
112	00738	RHINLVE060001	NA	INLRHDTC06001
113	00739	RHINLVE060001	NA	INLRHDTC06001
114	00740	RHINLVE060001	NA	INLRHDTC06001
115	00741	RHINLVE060001	NA	INLRHDTC06001
116	00742	RHINLVE060001	NA	INLRHDTC06001
117				
118				
119				
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131				

RTR/VE Summary Results
Visual Examination confirmed that liquids greater than 1 percent are absent from the waste and that the physical properties of the waste are consistent with ID-ANLE-S5000.

SPQAO Signature	SPQAO Printed Name	Date
AKE Signature	AKE Printed Name	Date
SPM Signature	SPM Printed Name	Date

Attachment 7 – Remote-Handled Characterization Reconciliation Report SPM/AKE
Comments Sheet EXAMPLE

CRR Number		CRR-ANLE-AGHCF S5000-001
Site		INL
Waste Stream		ID-ANLE-S5000
SPM/AKE/SPQAO COMMENTS		
Commenter shall Print their name, Sign and date comments.		

