

# CCP-TP-001

Revision 19

CCP

Project Level

Data Validation and Verification

EFFECTIVE DATE: 12/29/2010

Larry Porter

PRINTED NAME

APPROVED FOR USE

## RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
4	12/14/2001	Revised to reflect the use of an electronic data management system at some sites. A new Section 4.4 was created; minor changes to Section 4.7; references and records updated, and Attachments 1 through 4 revised.
5	03/08/2002	Minor editorial changes; added a new Section 4.8, and a new Attachments 7 through 11.
6	05/15/2002	Description of Revision: Changes made due to the Revision of DOE/WIPP-02-3122, <i>Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant</i> (CH-WAC) and changes to the Permit Modification to be implemented June 1, 2002. Plus planned changes due to process improvement. Multiple section changes as well as Attachment changes.
7	01/13/2003	Updated title of CCP-PO-005. Updated attachments 1 through 12.
8	02/03/2003	Additions to Attachment 4 and Attachment 5, DAC requirements. Resolved CBFO comments.
9	07/10/2003	Text and attachments to include Homogeneous Solid/Soil Waste Sampling and Checklists. Added steps to validate BDRs through P-TS. Separated electronically fillable forms and updated references in procedure.
10	08/28/2003	Revised sections 2.1, 2.6, 3.2, 4.3, and 5.1.
11	03/23/2005	Revised to incorporate LANL Off-Site Source Recovery Project (OSRP) requirements. Deleted Section 4.5, e-QA forms, Attachments 1 through 4 due to closure of Argonne National Laboratory (ANL)-East. Revised CCP Records Custodian and Facility Records Custodian responsibilities and actions.
12	05/25/2006	Revised to address Carlsbad Field Office (CBFO) Document Review Record (DRR) comments.
13	07/21/2006	Revised Attachments 10, 11, 13, 14, and 15 in response to Corrective Action Report (CAR) Number CAR-LANL-0006-06.
14	11/16/2006	Revised to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR). Addressed Carlsbad Field Office (CBFO) Document Review Record (DRR) comments.
15	11/22/2006	Minor revision to correct header in Attachment 12.

RECORD OF REVISION (Continued)

Revision Number	Date Approved	Description of Revision
16	04/26/2007	Clarification of note in Section 4.3 for quarterly reports.
17	09/24/2007	Revised to clarify the references in the attachments and to remove the 25%RPD limit for solids/soils co-located cores/samples from Attachments 6, 7, 8 and 9. Revised to remove Visual Examination (VE) Expert decisions and signature and date. Modifications were made to Sections 4.4, 4.5, and Attachments 6 through 9 to discuss the F-test and control charts.
18	08/09/2010	Revised to address Hazardous Waste Facility Permit modification, and other editorial and freeze file changes.
19	12/29/2010	Revised to clarify independent technical reviewer (ITR) Independence and to update references to the <i>Waste Isolation Pilot Plant Hazardous Waste Facility Permit</i> .

TABLE OF CONTENTS

1.0 PURPOSE..... 6  
1.1 Scope..... 6

2.0 REQUIREMENTS..... 7  
2.1 References ..... 7  
2.2 Training Requirements..... 7  
2.3 Equipment List ..... 7  
2.4 Precautions and Limitations..... 7  
2.5 Prerequisite Actions ..... 7  
2.6 Definitions ..... 8  
2.7 Project Office Data Package - Tracking System (P-TS) (where available) ..... 8

3.0 RESPONSIBILITIES..... 9  
3.1 SPM ..... 9  
3.2 CCP Records Custodian ..... 10  
3.3 Facility Records Custodian ..... 10

4.0 PROCEDURE..... 11  
4.1 BDR Receipt ..... 11  
4.2 SPM BDR Review ..... 11  
4.3 Quarterly Repeat of DGL Data Review, Validation, and Verification..... 17  
4.4 Reporting Relative Percent Difference (RPD) and F-test Method Results for  
Co-located Cores/Samples ..... 19  
4.5 Acceptance Criteria for Co-located Cores/Samples..... 21

5.0 RECORDS..... 22

LIST OF ATTACHMENTS

Attachment 1 – CCP SPM Visual Examination Project Level Validation Checklist and Summary ..... 24

Attachment 2 – CCP SPM Radiography Project Level Validation Checklist and Summary.. 28

Attachment 3 – CCP SPM Nondestructive Assay Project Level Validation Checklist and Summary ..... 31

Attachment 4 – CCP SPM S3000/S4000 Waste Sampling Checklist and Summary ..... 35

Attachment 5 – CCP SPM S3000/S4000 Total Metals Analysis Project Level Validation Checklist and Summary ..... 39

Attachment 6 – CCP SPM S3000/S4000 Total Non-Halogenated Volatile Organic Compound Analysis Project Level Validation Checklist and Summary ..... 44

Attachment 7 – CCP SPM S3000/S4000 Total Volatile Organic Compound Analysis Project Level Validation Checklist and Summary ..... 49

Attachment 8 – CCP SPM S3000/S4000 Total Semi-Volatile Organic Compound Analysis Project Level Validation Checklist and Summary ..... 55

Attachment 9 – CCP SPM HSG Summa Sampling Project Level Validation Checklist and Summary ..... 61

Attachment 10 – CCP SPM Summa HSG Analysis Project Level Validation Checklist and Summary ..... 65

Attachment 11 – CCP SPM Off-Site Source Recovery Sealed Source Radiological Characterization Project Level Validation Checklist and Summary ..... 70

LIST OF TABLES

Table 1. Critical Values for the 90th Percentile of the F Probability Distribution with 1 Degree of Freedom in the Numerator and n-1 Degrees of Freedom in the Denominator of the Variance Ratio ..... 21

## 1.0 PURPOSE

Waste characterization data generated by characterization activities are validated and verified in compliance with CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan (QAPjP)* and CCP-PO-002, *CCP Transuranic Waste Certification Plan*. The format of CCP-PO-001 parallels that of the *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, NM 4890139088 TSDf, Attachment C, Waste Analysis Plan (WAP)*. Characterization data requiring review, validation and verification includes Nondestructive Examination (NDE), Nondestructive Assay (NDA), Sealed Sources Radiological Characterization Data, Headspace Gas (HSG) Sampling and Analysis, Solids/Soils Waste Sampling and Analysis, and Visual Examination (VE).

### 1.1 Scope

---

#### **NOTE**

Gas Generation Testing (GGT) data review and validation are not addressed in this procedure. Refer to CCP-PO-016, *CCP Gas Generation Testing Program Quality Assurance Project Plan* for guidance.

---

This procedure defines the activities required to perform data validation and verification at the Central Characterization Project (CCP) Project Office. This procedure is applicable to all personnel performing data validation and verification. The Site Project Manager (SPM) is responsible for conducting the data validation and verification activities described in this procedure. Compliance with this procedure ensures that each batch data report (BDR) complies with the requirements of the CCP-PO-001 and CCP-PO-002.

## 2.0 REQUIREMENTS

### 2.1 References

#### Referenced Documents

- *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, NM 4890139088-TSDF, Attachment C, Waste Analysis Plan*
- *CCP-PO-001, CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- *CCP-PO-002, CCP Transuranic Waste Certification Plan*
- *CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)*
- *CCP-PO-016, CCP Gas Generation Testing Program Quality Assurance Project Plan*
- *CCP-QP-002, CCP Training and Qualification Plan*
- *CCP-QP-005, CCP TRU Nonconforming Item Reporting and Control*
- *CCP-QP-006, CCP Corrective Action Reporting and Control*
- *CCP-QP-008, CCP Records Management*

### 2.2 Training Requirements

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 None.

2.6 Definitions

2.6.1 None.

2.7 Project Office Data Package - Tracking System (P-TS) (where available)

2.7.1 The P-TS provides the capability of tracking BDRs for review.

2.7.2 The P-TS provides, as a minimum, the following:

[A] Link to a scanned copy of the BDR.

[B] Status of the BDR.

[C] HOLD status of the BDR.

[D] Status of Nonconformance Reports (NCRs).

### 3.0 RESPONSIBILITIES

---

#### NOTE

Implementation of this procedure requires the following positions: Data Generation Level (DGL) Personnel, SPM, CCP Records Custodian, and Facility Records Custodian.

---

#### 3.1 SPM

- 3.1.1 Reviews 100 percent of the BDRs generated as a result of waste characterization activities prior to any of the waste associated with the data reviewed being shipped to the Waste Isolation Pilot Plant (WIPP).
- 3.1.2 Ensures the DGL Independent Technical Reviewer (ITR) reviews, validations, and verifications have been performed by verifying completed review checklists and appropriate signatures.
- 3.1.3 Ensures BDR review checklists are complete.
- 3.1.4 Ensures Testing, Sampling, Analytical, BDR Quality Checks (QC), and data are within established data assessment criteria and meet all applicable Quality Assurance Objectives (QAOs) as defined by CCP-PO-001.
- 3.1.5 Ensures BDRs are complete and data are properly reported (e.g., data are reported in the correct units, correct significant figures, and correct qualifying flags).
- 3.1.6 Prepares the applicable CCP SPM Project Level Data Validation Summary.
- 3.1.7 Verifies the validity of the drum age criteria (DAC) assignment made at the DGL based upon an assessment of the data collection and evaluation necessary to make the assignment.
- 3.1.8 Releases, by signature and date, the BDR upon completion of the SPM review.
- 3.1.9 Generates NCRs in accordance with CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control* and Corrective Action Reports (CARs) in accordance with CCP-QP-006, *CCP Corrective Action Reporting and Control* as required.
- 3.1.10 Reviews NCRs and verifies corrective actions, as needed.

3.1.11 Determines if U.S. Department of Energy (DOE)/Carlsbad Field Office (CBFO) reporting is required for NCRs/CARs generated at the SPM level.

[A] Makes notifications to DOE/CBFO, and ensures actions are completed as required.

3.2 CCP Records Custodian

3.2.1 Receives corrected BDR or BDR pages from the Facility Records Custodian, as necessary, in accordance with CCP-QP-008, *CCP Records Management*.

3.3 Facility Records Custodian

3.3.1 Enters BDR into the P-TS.

3.3.2 Receives, processes, and transmits corrected BDR or BDR pages to CCP Records Custodian, when applicable, in accordance with CCP-QP-008.

4.0 PROCEDURE

4.1 BDR Receipt

**Facility Records Custodian**

4.1.1 Enter BDR into the P-TS.

---

**NOTE**

Steps in Section 4.2 may be performed in any order.

---

4.2 SPM BDR Review

---

**NOTE**

Section 4.2 must be completed for 100 percent of the BDRs transmitted to the SPM.

The SPM must perform a comprehensive review of the data (e.g., correct units, significant figures, and qualifying flags are met, as well as ensuring that data assessment criteria are met).

---

**SPM**

4.2.1 Initiate BDR review in the P-TS as follows:

- [A] Log into the P-TS.
- [B] Select BDR to review (e.g., the P-TS Daily Hot Lists).
- [C] Click on START SPM REVIEW.
- [D] Compare Container Identifications (IDs) in the BDR to the Container IDs included in the P-TS.
- [E] **IF** any Container IDs from the BDR are missing from the P-TS **OR DO NOT** match those entered into the P-TS, **THEN** contact the CCP Records Custodian/Facility Records Custodian, **AND** resolve the problem.
  - [E.1] Place BDR on HOLD by selecting, PLACE BDR ON HOLD, if necessary, **AND** enter reason for HOLD in the Comments/Qualifiers Section by selecting ADD/EDIT COMMENTS.

- [E.2] **WHEN** the problem is resolved,  
**THEN** select REMOVE HOLD FROM BDR in the P-TS.
- [E.3] Compare NCRs included in the BDR to the NCRs in the P-TS, if applicable.
- [E.4] **IF** any NCRs are missing from the P-TS **OR DO NOT** match those entered into the P-TS for the BDR,  
**THEN** contact the NCR Coordinator, **AND** resolve the problem.
- [E.5] Place BDR on HOLD by selecting, PLACE BDR ON HOLD, if necessary, **AND** enter reason for HOLD in the Comments/Qualifiers Section by selecting ADD/EDIT COMMENTS.
- [E.6] **WHEN** the problem is resolved,  
**THEN** select REMOVE HOLD FROM BDR in the P-TS.

---

**NOTE**

Containers for Newly Generated Waste will **NOT** appear in the Acceptable Knowledge (AK) Tracking Spreadsheet on the CCP File Transfer Protocol (ftp) site for VE Technique BDRs. All Newly Generated Waste containers should be listed in the AK Tracking Spreadsheet at the time of validation for all other BDR types.

---

---

**NOTE**

Reports derived from the P-TS Search function use the AK Tracking Spreadsheets and can be used to verify Container IDs.

---

- [F] Compare Container IDs in the BDR to the approved AK Tracking Spreadsheet on the CCP ftp site.
- [G] **IF** any Container IDs are included in the BDR that are **NOT** on the approved and posted AK Tracking Spreadsheet,  
**THEN** contact the AK Expert.
- [G.1] Place BDR on HOLD by selecting, PLACE BDR ON HOLD, if necessary, **AND** enter reason for HOLD in the Comments/Qualifiers Section by selecting ADD/EDIT COMMENTS.
- [G.2] **WHEN** the problem is resolved,  
**THEN** select REMOVE HOLD FROM BDR in the P-TS.

- 4.2.2 Select the appropriate SPM checklist for the BDR being reviewed.
  - 4.2.3 Record the BDR Number at the top of the appropriate SPM checklist.
  - 4.2.4 Record the Sampling, Analysis, Sampling/Analysis, or Examination Date(s) at the top of the appropriate SPM checklist.
  - 4.2.5 Verify that the DGL ITR reviews, validations, and verifications have been performed as evidenced by the completed review checklist and appropriate signature release.
  - 4.2.6 Verify the BDR is complete.
  - 4.2.7 Verify that data are within established data assessment criteria and meet all applicable QAOs: Precision, Accuracy, Completeness, Comparability, and Representativeness.
- 

**NOTE**

To answer questions regarding specific criteria being met, (i.e., QAOs, QCs), the SPM must ensure that the information presented in the BDR meets the requirements identified in CCP-PO-001, CCP-PO-002, and CCP-PO-003, *CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)*.

---

- 4.2.8 Answer each question on the appropriate SPM checklist after verifying that the specific criteria have been met.
- 

**NOTE**

All containers listed in the BDR will be listed on the SPM checklist.

---

- 4.2.9 **IF** any question is answered NO, **THEN** evaluate the impact, **AND** perform steps 4.2.11 and 4.2.14, as appropriate.
- 4.2.10 **IF** any question is answered NA or NO, **THEN** provide justification in the Comments/Qualifiers Section of the appropriate SPM checklist, as applicable.

---

**NOTE**

Editorial corrections may be made to the BDR by the Operator, ITR, SPM or a Designee as directed by these personnel. The extent of editorial corrections permitted by a Designee is identified in CCP-QP-008. Data affecting changes are ONLY made by DGL personnel. Any data affecting changes made by DGL personnel will require a re-review by the Operator, ITR, and SPM.

---

4.2.11 **IF** editorial inconsistencies, mistakes, omissions, etc., are noted during the SPM review, that **DO NOT** change the characterization data,

**THEN** notify DGL personnel of required corrections, **AND** edit the BDR in accordance with CCP-QP-008.

[A] Place BDR on HOLD by selecting, PLACE BDR ON HOLD, if necessary, **AND** enter reason for HOLD in the Comments/Qualifiers Section by selecting ADD/EDIT COMMENTS.

**DGL Personnel**

[B] Perform editorial corrections, as needed.

[C] Resubmit corrected BDR or BDR pages to the Facility Records Custodian in accordance with CCP-QP-008.

**Facility Records Custodian**

[D] Receive, process, and transmit or maintain corrected BDR or BDR pages in accordance with CCP-QP-008.

[E] Notify SPM to continue review.

4.2.12 **IF** required changes **CAN NOT** be adequately documented on the SPM checklist,  
**THEN** include additional information on an additional sheet of paper as needed.

4.2.13 **IF** additional information is placed after an SPM checklist,  
**THEN** indicate, on the appropriate SPM checklist, that additional information is being provided, **AND** paginate the inserted documentation to show which checklist it is associated with (e.g., SPM-1).

4.2.14 **IF** data affecting inconsistencies, mistakes, omissions, etc., are noted during the SPM review, that impact or change the characterization data,  
**THEN** place BDR on HOLD by selecting, PLACE BDR ON HOLD,  
**AND** enter reason for HOLD in the Comments/Qualifiers Section by selecting ADD/EDIT COMMENTS:

- [A] Initiate an NCR in accordance with CCP-QP-005.
- [B] Record comments as needed in the Comments/Qualifiers Section of the appropriate SPM checklist.

**DGL Personnel**

- [C] Correct the deficiency.
- [D] Re-review in accordance with the applicable procedure, **AND** resubmit corrected BDR or BDR pages to the CCP Records Custodian/Facility Records Custodian.

**CCP Records Custodian/Facility Records Custodian**

- [E] Receive, process, and transmit or maintain the corrected BDR or BDR pages in accordance with CCP-QP-008.
- [F] Notify the applicable SPM that corrected pages have been received.

4.2.15 SPM Re-review Process for Data Affecting Changes After Project Level Validation and Verification

**SPM**

- [A] Insert corrections.
  - [A.1] **IF** revised page contains correction or additional information,  
**THEN** replace the BDR record page with the corrected page.  
  
**OR**
  - [A.2] **IF** additional corrected pages are inserted in the numbered section of the BDR,  
**THEN** supercede pages, **AND** properly paginate the inserted documentation in accordance with CCP-QP-008.

- [B] Select RE-REVIEW button in the P-TS, if necessary.
- [C] Perform a re-review of the corrected BDR.
- [D] Verify that all criteria have been met and the review is complete.
- [E] Select REMOVE HOLD ON BDR in the P-TS, if necessary, **AND** complete review in the P-TS.

4.2.16 Print name, sign name, enter reason for re-review, and enter date completed on the appropriate SPM checklist in the re-review signature area.

4.2.17 **WHEN** all criteria have been verified, **AND** the review is complete, **THEN** select END SPM BDR REVIEW in the P-TS.

---

**NOTE**

Additional information is information that is added to the back of the SPM checklist after receipt at the Project Level. Additional information can be in the form of e-mail authorizations for administrative changes, letters or e-mails of clarification to posed questions (This list is not all inclusive).

---

4.2.18 **IF** additional information is placed after an SPM checklist, **THEN** indicate, on the appropriate SPM checklist, that additional information is being provided, **AND** paginate the inserted documentation to show which checklist it is associated with (e.g., SPM-1).

4.2.19 Forward the completed SPM checklist, and any additional information, to the CCP Records Custodian/Facility Records Custodian.

4.2.20 **IF** the BDR in review was an HSG sampling/analysis or Solids sampling/analysis that includes containers that were randomly selected for HSG or Solids sampling, **THEN** notify records to submit the subject BDR to the WIPP Operating Record. This notification is completed by an e-mail to [ccprecords@wipp.ws](mailto:ccprecords@wipp.ws). Include the subject BDR numbers and the corresponding waste stream for which the containers were sampled.

**CCP Records Custodian/Facility Records Custodian**

4.2.21 Receive, process, and transmit or maintain in accordance with CCP-QP-008.

---

4.3 Quarterly Repeat of DGL Data Review, Validation, and Verification

---

**NOTE**

The SPM shall ensure that a repeat of the DGL data review, validation, and verification of data generated to meet the requirements of CCP-PO-001 is performed quarterly for a minimum of one randomly chosen waste container. The SPM uses this exercise to document that the DGL data review, validation, and verification is being performed in accordance with applicable procedures.

---

**SPM**

---

**NOTE**

HSG and Total Analysis for all Host sites are performed at INL Laboratories and the randomly selected quarterly re-review will be selected from those analyzed by labs during the last quarter.

---

- 4.3.1 Randomly select one waste container for a repeat of the DGL data review, validation, and verification for each characterization methodology performed in the last quarter.
- 

**NOTE**

The following documents will be included in the quarterly DGL data review, validation, and verification: the original data reported, any nonconformances generated prior to ITR, reviews, and QC Data Sheets. The BDR Batch Narrative will **NOT** be included.

---

- 4.3.2 Retrieve a copy of the BDR from CCP Records.
- 

**NOTE**

When possible, a different ITR will be used for the quarterly DGL data review, validation, and verification of the selected waste container.

---

- 4.3.3 Assemble the mini-container package.
- 4.3.4 Document the container selection and the assignment of the DGL ITR by interoffice memorandum.
- 4.3.5 Submit a copy of the mini-container package to the Host site for re-review.

**NOTE**

DGL Personnel will review submitted data and generate new Tables of Contents, BDR Batch Narratives and DGL Checklists. Any discrepancies will be noted in the BDR Batch Narrative.

---

**SPM**

- 4.3.6 Perform a review of the re-submitted data in accordance with Section 4.2.
- 4.3.7 Compare the original BDR submitted for the selected container with the re-submitted data.
- 4.3.8 Document the comparison, by interoffice memorandum, to CCP Records.
- 4.3.9 **IF** discrepancies or problems that affect data quality are noted during the review,  
**THEN** perform the following:
  - [A] Initiate an NCR in accordance with CCP-QP-005.
  - [B] Notify the appropriate facility personnel.
- 4.3.10 Submit the re-reviewed package, associated information, and copy of interoffice memorandum to CCP Records.

**Facility Records Custodian/CCP Records Custodian**

- 4.3.11 Receive, process, and transmit the reviewed package, associated information, and copy of interoffice memorandum in accordance with CCP-QP-008.

4.4 Reporting Relative Percent Difference (RPD) and F-test Method Results for Co-located Cores/Samples

---

**NOTE**

The RPD can only be calculated when each analyte is detected above the MDL for the co-located cores/samples.

---

**SPM**

- 4.4.1 Identify the core/sample and the co-located core/sample in the BDRs that have been reviewed.
- 4.4.2 Obtain copies of the original BDR from the CCP Records Custodian/Facility Records Custodian, **OR** view the scanned copy on the P-TS.
- 4.4.3 Assemble the analytical results for the co-located core/sample and the core/sample.
- 4.4.4 Compare the analytical results and calculate the RPD for each analyte detected in the co-located cores/samples using the following equation:

$$RPD = \frac{C_1 - C_2}{\left(\frac{C_1 + C_2}{2}\right)} \times 100$$

where  $C_1$  and  $C_2$  are the two values obtained by analyzing duplicate samples.  $C_1$  is the larger of the two observed values.

---

**NOTE**

The F-test method can be used only with multiply-detected (2 or more detections) analytes.

---

- 4.4.5 Calculate the F-test method results for each multiply-detected analyte in the batch as follows:

- [A] Calculate the co-located pair variance using the following equation:

$$s_c^2 = \frac{1}{2}(C_1 - C_2)^2$$

where  $C_1$  and  $C_2$  are the analytic results for the two co-located cores/samples.

- [B] Calculate the batch variance using the following equation:

$$S_B^2 = \frac{\sum_{i=1}^n (C_i - \bar{C})^2}{n - 1}$$

where

$C_i$  = the detected concentration in the  $i^{\text{th}}$  core/sample  
 $n$  = the number of cores/samples with detected concentrations

and  $\bar{C}$  = the mean (average) of the detected concentrations.

- [C] Calculate the F-test method result using the following equation:

$$F = \frac{S_C^2}{S_B^2}$$

- [D] Compare the calculated F-test result value to the associated F-test critical value shown in Table 1.

4.4.6 **IF** discrepancies or problems that affect data quality are noted during the review,  
**THEN** perform the following:

[A] Initiate an NCR in accordance with CCP-QP-005.

[B] Notify the appropriate DGL personnel and the SPM.

4.4.7 Document the calculated RPD and F-test method results by interoffice memorandum, to CCP Records.

4.4.8 Submit the interoffice memorandum and associated information to the CCP Records Custodian/Facility Records Custodian.

#### **Facility Records Custodian**

4.4.9 Receive, process, and transmit the reviewed record in accordance with CCP-QP-008.

4.5 Acceptance Criteria for Co-located Cores/Samples

**NOTE**

Calculation of RPD and F-test method results are used to evaluate sampling precision.

Until a sufficient number (25-30) of co-located cores/samples have been evaluated to develop control charts for the RPD, batch F-test method results will be used to evaluate precision. If too few analyte detections exist to permit F-test method calculation for at least one analyte in the batch, RPD should be evaluated for acceptance using the same criterion as for the field duplicate.

Once a sufficient number (25 to 30) of collocated cores/samples have been collected, precision will be evaluated by comparing the calculated batch-related RPD with the RPD control chart limits.

4.5.1 Confirm that the Acceptance Criteria for sampling precision are met by one of the following, as appropriate:

[A] Verify that all multiply-detected analytes in the batch exhibit F-test method results less than the associated 90th percentile for the F probability distribution with 1 and n-1 degrees of freedom as listed in Table 1, Critical Values for the 90th Percentile of the F Probability Distribution with 1 Degree of Freedom in the Numerator and n-1 Degrees of Freedom in the Denominator of the Variance Ratio,

**OR**

[B] Verify that the calculated RPD for each detected co-located core/sample pair is within the associated control chart limit of three standard deviations above or below the average RPD value.

Table 1. Critical Values for the 90th Percentile of the F Probability Distribution with 1 Degree of Freedom in the Numerator and n-1 Degrees of Freedom in the Denominator of the Variance Ratio

N	Number of cores/samples with detected analyte (excluding collocated cores/samples)								
	2	3	4	5	6	7	8	9	10
<b>F<sub>1,n-1,0.90</sub></b>	39.863	8.526	5.538	4.545	4.060	3.776	3.589	3.458	3.360

## 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] Attachment 1, CCP SPM Visual Examination Project Level Validation Checklist and Summary
- [B] Attachment 2, CCP SPM Radiography Project Level Validation Checklist and Summary
- [C] Attachment 3, CCP SPM Nondestructive Assay Project Level Validation Checklist and Summary
- [D] Attachment 4, CCP SPM S3000/S4000 Waste Sampling Checklist and Summary
- [E] Attachment 5, CCP SPM S3000/S4000 Total Metals Analysis Project Level Validation Checklist and Summary
- [F] Attachment 6, CCP SPM S3000/S4000 Total Non-Halogenated Volatile Organic Compound Analysis Project Level Validation Checklist and Summary
- [G] Attachment 7, CCP SPM S3000/S4000 Total Volatile Organic Compound Analysis Project Level Validation Checklist and Summary
- [H] Attachment 8, CCP SPM S3000/S4000 Total Semi-Volatile Organic Compound Analysis Project Level Validation Checklist and Summary
- [I] Attachment 9, CCP SPM HSG Summa<sup>®</sup> Sampling Project Level Validation Checklist and Summary
- [J] Attachment 10, CCP SPM Summa<sup>®</sup> HSG Analysis Project Level Validation Checklist and Summary
- [K] Attachment 11, CCP SPM Off-Site Source Recovery Sealed Source Radiological Characterization Project Level Validation Checklist and Summary
- [L] Interoffice memorandum for the Quarterly Repeat of DGL Data Review BDR

[M] Container selection and the assignment of the DGL ITR interoffice memorandum

5.1.2 QA/Nonpermanent

[A] Project Office Data Package – Tracking System (P-TS)

Attachment 1 – CCP SPM Visual Examination Project Level Validation Checklist and Summary

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
1. Is the completed, signed and dated Independent Technical Reviewer Checklist included in the BDR, and the independent technical reviewer was not involved in the generation or recording of the data under review? <b>Reference Source: CCP-PO-001, C3-10b</b>				
2. Does the BDR contain all items addressed in the BDR Table of Contents? <b>Reference Source: CCP-PO-001, C3-10b</b>				
3. Does the BDR include a listing of all container numbers in the batch? <b>Reference Source: CCP-PO-001, C3-10b</b>				
4. List all containers that have met QAOs. <b>Reference Source: CCP-PO-001, C3-10b</b>				Container Numbers:
5. Is the current implementing procedure and revision number included in the BDR? <b>Reference Source: CCP-PO-001, C3-4, C3-10b, Table C3-11</b>				
6. Is the BDR date included? <b>Reference Source: CCP-PO-001, Table C3-11</b>				
7. Is there a reference to or copy of any associated NCRs (if any) in the BDR? <b>Reference Source: CCP-PO-001, Table C3-11</b>				
8. Are there 20 or fewer containers in the batch? <b>Reference Source: CCP-PO-001 C3-10</b>				
9. Are the data properly reported (i.e., data are reported in correct units and with correct significant figures). <b>Reference Source: CCP-PO-001 C3-10b</b>				
10. Is there evidence of verification that the physical form matches the Waste Matrix Code? <b>Reference Source: CCP-PO-001, C3-4</b>				
11. Is there evidence of verification that the physical form matches the waste stream description? <b>Reference Source: CCP-PO-001, C1-4</b>				
12. Are prohibited items absent? <b>Reference Source: CCP-PO-001, C3-4</b>				

Attachment 1 – CCP SPM Visual Examination Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
13. Does observable liquid, if present, meet the criteria of the TSDF-WAC? <b>Reference Source: CCP-PO-001, C3-4b</b>				
14. Were discrepancies between the Visual Examination operator and the ITR with regards to identification of waste matrix code, liquids in excess of the TSDF-WAC, or compressed gases reconciled? NA if no discrepancies. <b>Reference Source: CCP-PO-001, C3-4b</b>				
15. Are the training requirements met for the VE Expert and VE Operators who have signed the data forms? <b>Reference Source: CCP-PO-001, C1-4, C3-4</b>				
16. Is evidence of a satisfactory audio/video test included in the BDR? NA [not applicable] for VE Method for Newly Generated Waste. <b>Reference Source: CCP-PO-001, C1-4</b>				
17. If the VE was not recorded using audio/video media, does the data sheet contain the signature of two qualified operators who observed for themselves the waste being placed into the container? NA if audio/video used. <b>Reference Source: CCP-PO-001, C1-4</b>				
18. Are the weights/estimated weights for the 12 waste material parameters reported in kilograms (kg)? <b>Reference Source: CCP Technical Procedures</b>				
19. Are the descriptions for each waste material parameter included in the BDR? <b>Reference Source: CCP-PO-001, C1-4</b>				
20. Is the gross weight reported (in kg) for each container included in the BDR? <b>Reference Source: CCP Technical Procedures</b>				
21. Is the number of layers of confinement recorded? <b>Reference Source: CCP-PO-001, C-3d</b>				
22. Is sufficient information included in the BDR to determine the packaging configuration? <b>Reference Source: CCP-PO-001 C-3d</b>				

Attachment 1 – CCP SPM Visual Examination Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
23. Is the type and number of filters recorded? <b>Reference Source: CCP-PO-001, C-3d</b>				
24. Is the size of the rigid liner vent hole recorded to determine the appropriate DAC? NA if no liner lid. <b>Reference Source: CCP-PO-001, C-3d</b>				
25. For Los Alamos National Laboratory (LANL) Sealed Sources, does the characterized waste container meet the definition of sealed sources per Title 10 Code of Federal Regulations (CFR) 30.4 and Title 10 CFR 835.2 (effective January 1, 2004) evidence of which is assembled as part of AK documentation? <b>Reference Source: CCP Technical Procedures</b>				
26. For LANL Sealed Sources, are sealed sources the only non-packaging items in the waste container? <b>Reference Source: CCP Technical Procedures</b>				
27. For LANL Sealed Sources, are the sealed sources a U.S. Department of Transportation (DOT) Special Form Class 7 (Radioactive Material) per Title 49 CFR 34.27 (effective January 1, 2004) and the certification of which is assembled as part of the AK documentation? <b>Reference Source: CCP Technical Procedures</b>				
28. For LANL Sealed Sources, is the integrity of each sealed source validated by documented contamination survey results to meet the requirements of Title 10 CFR 34.27 (effective January 1, 2004), and assembled as part of AK documentation? <b>Reference Source: CCP Technical Procedures</b>				

Attachment 1 – CCP SPM Visual Examination Project Level Validation Checklist and Summary (Continued)

<b>BDR Number:</b> _____		<b>Examination Date:</b> _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
29. For LANL Sealed Sources, is each sealed source a rigid sealed container less than or equal to 4 L in size or in a rigid sealed container less than or equal to 4 L? <b>Reference Source: CCP Technical Procedures</b>				
30. For LANL Sealed Sources, AK documentation does not indicate the use of volatile organic compounds (VOCs) or VOC-bearing materials as constituents of sealed sources? <b>Reference Source: CCP Technical Procedures</b>				
31. For LANL Sealed Sources, the outer casing of each sealed source is of a non VOC-bearing material which is verified using the VE technique at the time of packaging? <b>Reference Source: CCP Technical Procedures</b>				
<b>Comments:</b>				
The container QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis. The batch is complete, acceptable, and includes all supporting data and documentation required by the QAPjP.				
SPM Printed Name	Signature			Date

Checklist is to be re-signed only when a re-review is performed.

SPM Printed Name	Signature	Reason	Date
SPM Printed Name	Signature	Reason	Date

Attachment 2 – CCP SPM Radiography Project Level Validation Checklist and Summary

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
1. Is the completed, signed, and dated Independent Technical Reviewer Checklist included in the BDR, and the independent technical reviewer was not involved in the generation or recording of the data under review? <b>Reference Source: CCP-PO-001, C3-10b</b>				
2. Does the BDR contain all items addressed in the BDR Table of Contents? <b>Reference Source: CCP-PO-001, C3-10b</b>				
3. Does the BDR include a listing of all the container numbers in the batch? <b>Reference Source: CCP-PO-001, C3-10b</b>				
4. List all containers that have met QAOs. <b>Reference Source: CCP-PO-001, C3-10b</b>				Container Numbers:
5. Does the BDR identify the current implementing procedure and revision number? <b>Reference Source: CCP-PO-001, Table C3-11</b>				
6. Is there a reference to or copy of any associated NCRs (if any) in the BDR? NA if no NCRs. <b>Reference Source: CCP-PO-001, Table C3-11</b>				
7. Are there 20 or fewer containers in the batch? <b>Reference Source: CCP-PO-001, C3-10</b>				
8. Are the data properly reported (i.e., data are reported in correct units and with correct significant figures)? <b>Reference Source: CCP-PO-001, C3-10b</b>				
9. Is there evidence of verification that the physical form matches the Waste Matrix Code? <b>Reference Source: CCP-PO-001, C3-4, Table C3-11</b>				

Attachment 2 – CCP SPM Radiography Project Level Validation Checklist and Summary  
(Continued)

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
10. Is there evidence of verification that the physical form matches the waste stream description? <b>Reference Source: CCP-PO-001, C1-3, Table C3-11</b>				
11. Are prohibited items absent? <b>Reference Source: CCP-PO-001, C3-4a</b>				
12. Does observable liquid, if present, meet the criteria of the TSDF-WAC? <b>Reference Source: CCP-PO-001, C3-4a</b>				
13. Were discrepancies between two operators with regard to identification of waste matrix code, liquids in excess of the TSDF-WAC, or compressed gases through replicate scans and independent observations reconciled? NA if no discrepancies. <b>Reference Source: CCP-PO-001, C3-4a</b>				
14. Are the training qualifications for all radiography personnel acceptable? <b>Reference Source: CCP-PO-001, C3-4a</b>				
15. Was evidence of the video/audio check included in the BDR? <b>Reference Source: CCP-PO-001, C3-4a</b>				
16. Was the Lines-Pair Resolution Test Check included in the BDR? <b>Reference Source: CCP-PO-001, C3-4a</b>				
17. Was a replicate scan performed once per day, or once per batch, whichever is LESS frequent? <b>Reference Source: CCP-PO-001, C1-3</b>				
18. Was an independent observation performed once per day, or once per batch, whichever is LESS frequent? <b>Reference Source: CCP-PO-001, C1-3</b>				

Attachment 2 – CCP SPM Radiography Project Level Validation Checklist and Summary  
(Continued)

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
19. Were the replicate scan and independent observation performed on different waste containers? <b>Reference Source: CCP-PO-001, C1-3</b>				
20. Were the personnel performing the replicate scan and independent observation different from the individual who performed the original? <b>Reference Source: CCP-PO-001, C1-3</b>				
21. Does the BDR include an estimate of each material parameter weight in kg for each container? <b>Reference Source: CCP Technical Procedures</b>				
22. Does the BDR include a description of each material parameter for each container? <b>Reference Source: CCP-PO-001, Table C3-1</b>				
23. Is the container gross weight recorded in kilograms (kg) for each container in the BDR? <b>Reference Source: CCP Technical Procedures</b>				
24. Was the Scale Weight Calibration Check included in the BDR? <b>Reference Source: CCP Technical Procedures</b>				
25. Was the Scale Weight Check included in the BDR? <b>Reference Source: CCP Technical Procedures</b>				
Comments:				
The container QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis. The batch is complete, acceptable, and includes all supporting data and documentation required by the QAPjP.				
SPM Printed Name _____		Signature _____		Date _____

Checklist is to be re-signed only when a re-review is performed.

\_\_\_\_\_  
SPM Printed Name                      Signature                      Reason                      Date

\_\_\_\_\_  
SPM Printed Name                      Signature                      Reason                      Date

Attachment 3 – CCP SPM Nondestructive Assay Project Level Validation Checklist and Summary

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
1. Are the background measurements performed and recorded daily and included in the BDR? <b>Reference Source: CCP-PO-002, Attachment 1, A.4.2</b>				
2. Is the efficiency/energy calibration and resolution check performed and recorded daily and included in the BDR? <b>Reference Source: CCP-PO-002, Attachment 1, A.4.2</b>				
3. Were the performance checks and backgrounds done prior to the analysis of the samples? <b>Reference Source: CCP-PO-002, Attachment 1, A.4.2</b>				
4. Are the required QC checks specified on the ITR checklist within acceptable limits? <b>Reference Source: CCP-PO-002, Attachment 1, A.4.2</b>				
5. Is the matrix drum performed at least once per operational week? <b>Reference Source: CCP-PO-002, Attachment 1, A.4.2</b>				
6. List all containers that have met all QC criteria thresholds. <b>Reference Source: CCP-PO-002, Attachment 1, A.5.2</b>				Container Numbers:
7. Is there evidence of participation in the PDP program or any relevant approved comparison program? <b>Reference Source: CCP-PO-002, Attachment 1, A.4.1</b>				
8. Are the personnel training records acceptable? <b>Reference Source: CCP-PO-002, Attachment 1, A.4.1</b>				
9. Is a standard cover sheet included in the BDR? <b>Reference Source: CCP Technical Procedures</b>				
10. Is there reference to or copy of associated NCRs included in the BDR? NA if no NCRs associated with BDR. <b>Reference Source: CCP-QP-005</b>				

Attachment 3 – CCP SPM Nondestructive Assay Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
11. Is the method used for radioassay identified by the implementing procedure(s) and revision number(s) referenced for each container in the BDR? <b>Reference Source: CCP Technical Procedures</b>				
12. Is the current software revision number correct for each container in the BDR? <b>Reference Source: CCP-QP-022</b>				
13. Is the completed, signed, and dated Independent Technical Reviewer Checklist included in the BDR, and the independent technical reviewer was not involved in the generation or recording of the data under review? <b>Reference Source: CCP-PO-002, Attachment 1, A.5.1</b>				
14. Is the correct Waste Matrix Code referenced in the BDR? <b>Reference Source: CCP Technical Procedures</b>				
15. Is the method of expressing TMU specified in the BDR? <b>Reference Source: CCP-PO-002, 3.3.1</b>				
16. Does the instrument performing TRU/low-level waste measurement have an LLD of 100 nCi/g or less? <b>Reference Source: CCP-PO-002, Attachment 1, A.3</b>				
17. Are the ten WIPP tracked radionuclides of <sup>241</sup> Am, <sup>238</sup> Pu, <sup>239</sup> Pu, <sup>240</sup> Pu, <sup>242</sup> Pu, <sup>233</sup> U, <sup>234</sup> U, <sup>238</sup> U, <sup>90</sup> Sr, <sup>137</sup> Cs estimated activities and masses, including their associated TMU reported on each radioassay data sheet? <b>Reference Source: CCP-PO-002, 3.3.1</b>				
18. Is <sup>235</sup> U (in order to calculate FGE) reported as present or absent on each radioassay data sheet? <b>Reference Source: CCP-PO-002, Attachment 1, A.3</b>				
19. If <sup>235</sup> U is reported as present, is <sup>234</sup> U reported as present? NA, if <sup>235</sup> U is not present. <b>Reference Source: CCP Technical Procedures</b>				
20. Is the TRU alpha activity concentration and associated TMU reported for each container in the BDR? <b>Reference Source: CCP-PO-002, 3.3.1</b>				

Attachment 3 – CCP SPM Nondestructive Assay Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
21. Is the TRU alpha activity concentration limit of >100 nCi/g met for containers in the BDR? <b>Reference Source: CCP-PO-002, 3.3.3</b>				
22. Is the Total Pu239 FGE (g) and associated TMU reported for each container in the BDR? <b>Reference Source: CCP-PO-002, 3.3.1</b>				
23. Is the FGE plus two times the TMU less than or equal to the limits for containers in this BDR? 200 FGE for 55-gal drums/325 FGE for SWBs. Note: TMU equals one standard deviation. <b>Reference Source: CCP-PO-002, Table A-3</b>				
24. Is the decay heat reported for each container in the BDR? <b>Reference Source: CCP-PO-002, 3.3.1</b>				
25. Are all the appropriate QC forms (background, efficiency checks, control charts, and matrix drum) included in the BDR? <b>Reference Source: CCP-PO-002, Attachment 1, A.5.2</b>				
26. Is the name of the testing facility included in the BDR? <b>Reference Source: CCP-PO-002, Attachment 1, A.5.2</b>				
27. Is the batch number included in the BDR? <b>Reference Source: CCP-PO-002, Attachment 1, A.5.2</b>				
28. Is a listing of all container numbers in the BDR? <b>Reference Source: CCP-PO-002, Attachment 1, A.5.2</b>				
29. Does the BDR contain a BDR Table of Contents? <b>Reference Source: CCP-PO-002, Attachment 1, A.5.2</b>				
30. Are the testing report data sheets including the waste container number for each container included in the BDR? <b>Reference Source: CCP-PO-002, Attachment 1, A.5.2</b>				
31. Is the title "Radioassay Data Sheet" included for each container in the BDR? <b>Reference Source: CCP-PO-002, Attachment 1, A.5.2</b>				

Attachment 3 – CCP SPM Nondestructive Assay Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
32. Is the date of radioassay included for each container in the BDR? <b>Reference Source: CCP-PO-002, Attachment 1, A.5.2</b>				
33. Is the operator and reviewer signature release and date included for each container in the BDR? <b>Reference Source: CCP-PO-002, Attachment 1, A.5.2</b>				
34. Is the total Pu239 equivalent activity (Ci) reported for each container in the BDR? <b>Reference Source: CCP-PO-002, Attachment 1, A.5.2</b>				
35. Are the NDA net weights within 5% of the NDE net weight or the VE net weight, whichever is applicable, for each container in the BDR? <b>Reference Source: CCP Technical Procedures</b>				
Comments:				
The container QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis. The batch is complete, acceptable, and includes all supporting data and documentation required by the QAPjP.				
SPM Printed Name _____		Signature _____		Date _____

Checklist is to be re-signed only when a re-review is performed.

SPM Printed Name _____	Signature _____	Reason _____	Date _____
SPM Printed Name _____	Signature _____	Reason _____	Date _____

Attachment 4 – CCP SPM S3000/S4000 Waste Sampling Checklist and Summary

BDR Number: _____		Sampling Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
1. Does the Batch Data Report (BDR) have a BDR Table of Contents? <b>Reference Source: CCP Technical Procedures</b>				
2. Does the BDR contain the sampling BDR number, BDR date, and facility name? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
3. Does the BDR contain the identification number(s) and container numbers for the waste packages represented in this BDR? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
4. Are there 20 or less field samples per sampling batch? <b>Reference Source: CCP-PO-001, C3-10</b>				
5. Is there a reference to or copy of any associated NCRs (if any) in the BDR? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
6. Are the chain-of-custody (COC) forms and appropriate data sheets for each waste package included in this BDR? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
7. Does the BDR contain the sampling ID numbers and location (physical location within the container)? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
8. Does the waste package BDR contain the sampling date and time? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
9. Does the waste package BDR contain the sampler's signature? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
10. Is the sample matrix and type identified within the sampling BDR? <b>Reference Source: CCP-PO-001, Table C1-2</b>				
11. Does the BDR identify the sample number and size? <b>Reference Source: CCP-PO-001, Table C3-12</b>				

Attachment 4 – CCP SPM S3000/S4000 Waste Sampling Checklist and Summary  
(Continued)

BDR Number: _____		Sampling Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
12. Does the BDR identify the correct Waste Matrix Code? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
13. Is there a minimum of one co-located core/sample (or field duplicate) collected per sample batch or one per week during sampling operation, and is a description of the collected core included in the BDR? <b>Reference Source: CCP-PO-001, C3-3</b>				
14. Is there a minimum of one equipment blank for coring tools collected per equipment cleaning batch when sampling with compactor/coring unit? <b>Reference Source: CCP-PO-001, C1-2b</b>				
15. Is there a minimum of one equipment blank for coring tools cleaned when sampling with single coring unit? <b>Reference Source: CCP-PO-001, C1-2b</b>				
16. Is there a minimum of one equipment blank for liners collected per equipment cleaning batch? <b>Reference Source: CCP-PO-001, C1-2b</b>				
17. Are samples preserved by keeping them at a temperature of 4°C, ± 2° C? <b>Reference Source: CCP-PO-001, Table C1-4</b>				
18. Were proper procedures, including revision number, used and referenced in BDR? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
19. Were samples collected within 14 days, and is a time given between coring and sub-sampling? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
20. Were the samples transferred to the lab within the maximum holding times? <b>Reference Source: CCP-PO-001, Table C1-4</b>				
21. Are sampling equipment numbers (lot number for disposable equipment) included in the BDR? <b>Reference Source: CCP-PO-001, Table C3-12</b>				

Attachment 4 – CCP SPM S3000/S4000 Waste Sampling Checklist and Summary  
(Continued)

BDR Number: _____		Sampling Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
22. Are field records present in the BDR? Field records include: collecting problems (if applicable), sequence of sampling collection, inspection of the solids sampling area, inspection of the solids sampling equipment, coring tool test, and random location of sub-sample? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
23. Is the location (point of origin) where each sample was taken included in the BDR? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
24. Is the completed, signed, and dated Independent Technical Reviewer Checklist included in the BDR, and the independent technical reviewer was not involved in the generation or recording of the data under review? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
25. Does the BDR include a record of analysis requested and the laboratory? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
26. Is there a cross-reference of sampling equipment numbers with associated cleaning batch numbers in the BDR? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
27. Is the depth of waste included for each waste container? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
28. Are the calculations of core recovery included in the BDR? NA if the sampling is not a core. <b>Reference Source: CCP-PO-001, Table C3-12</b>				

Attachment 4 – CCP SPM S3000/S4000 Waste Sampling Checklist and Summary  
(Continued)

BDR Number: _____		Sampling Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
29. Is the co-located core/sample description included in the BDR? Reference Source: CCP-PO-001, Table C3-12				
Comments:				
The container QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis. The batch is complete, acceptable, and includes all supporting data and documentation required by the QAPjP.				
SPM Printed Name _____		Signature _____		Date _____

Checklist is to be re-signed only when a re-review is performed.

SPM Printed Name \_\_\_\_\_ Signature \_\_\_\_\_ Reason \_\_\_\_\_ Date \_\_\_\_\_

SPM Printed Name \_\_\_\_\_ Signature \_\_\_\_\_ Reason \_\_\_\_\_ Date \_\_\_\_\_

Attachment 5 – CCP SPM S3000/S4000 Total Metals Analysis Project Level Validation Checklist and Summary

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
1. Does the Batch Data Report (BDR) contain the batch number, laboratory name, and the date of the batch report? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
2. Has a BDR Narrative been included in the BDR? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
3. Is there a cross-reference between waste container number, field sample number, and lab sample number ID; and signature release by lab personnel in the BDR? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
4. Is the BDR complete? <b>Reference Source: CCP-PO-001, C3-10b</b>				
5. List all containers that have met QAOs. <b>Reference Source: CCP-PO-001, C3-10b</b>				Container Numbers:
6. Are there 20 or less samples per analytical batch? <b>Reference Source: CCP-PO-001, C3-10</b>				
7. Is there a reference to or copy of any associated NCRs (if any) in the BDR? NA if no NCRs associated with BDR. <b>Reference Source: CCP-PO-001, Table C3-13</b>				
8. Does the BDR contain a complete and signed copy of the COC form? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
9. Does the BDR include the date and time of analysis for each sample? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
10. Are the training qualifications for all personnel acceptable? <b>CCP-PO-001, Table C3-13</b>				
11. Are holding times within the 180-day requirement (except Mercury)? <b>Reference Source: CCP-PO-001, Table C1-4</b>				
12. Are holding times within the 28-day requirement for Mercury? <b>Reference Source: CCP-PO-001, Table C1-4</b>				

Attachment 5 – CCP SPM S3000/S4000 Total Metals Analysis Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
13. Have QC designations for samples been applied as appropriate? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
14. Is there a minimum of one laboratory control sample (LCS) analyzed per analytical batch? <b>Reference Source: CCP-PO-001, Table C3-9</b>				
14. Do the found values for all LCS analytes fall within the low/high control limits listed on the Laboratory Control Sample Form included in the BDR? <b>Reference Source: CCP-PO-001, Table C3-8 Footnote b</b>				
15. Is there a minimum of one matrix spike (MS) analyzed per analytical batch? <b>Reference Source: CCP-PO-001, Table C3-9</b>				
16. Do the %Rs for all MS analytes meet the 80-120 %R requirements? <b>Reference Source: CCP-PO-001, Table C3-8</b>				
17. Is a minimum of one matrix spike duplicate (MSD) analyzed per analytical batch? Note: The MSD is used in place of the laboratory duplicate. <b>Reference Source: CCP-PO-001, Table C3-9</b>				
18. Do the %Rs for all MSD analytes meet the 80-120 %R requirements? Note: The MSD is used in place of the laboratory duplicate. <b>Reference Source: CCP-PO-001, Table C3-8</b>				
19. Are the MS/MSD relative percent differences (RPDs) for all analytes less than or equal to 30? <b>Reference Source: CCP-PO-001, Table C3-8</b>				
20. Has the CCP Site Project Manager calculated and reported the results of the RPD and F-Test Method? <b>Reference Source: CCP-PO-001, Section C3-3</b>				
21. Were the applicable RPD or F-test method acceptance criteria met? <b>Reference Source: CCP-PO-001, Section C3-3</b>				

Attachment 5 – CCP SPM S3000/S4000 Total Metals Analysis Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
22. Is serial dilution performed once per analytical batch? Note: This applies only to inductively coupled plasma (ICP) analysis. Reference Source: CCP-PO-001, Table C3-9				
23. Is the serial dilution result $\leq 10\%$ D for initial sample results $> 50 \times$ IDL? If no, sample results must be "Z" flagged for sample results $> 10\%$ D and $> 50 \times$ IDL? Note: This applies only to ICP analysis. Reference Source: CCP-PO-001, Table C3-9				
24. Is the ICP initial calibration performed each day of operation? Note: This is a one standard and one blank calibration. Reference Source: CCP-PO-001, Table C3-9				
25. Is the ICP %R for the initial calibration verification (ICV) check standard within the 90% to 110% acceptance range? Reference Source: CCP-PO-001, Table C3-9				
26. Is Mercury initial calibration performed each day of operation? Note: This is a five-standard and one blank calibration. Reference Source: CCP-PO-001, Table C3-9				
27. Is the Mercury %R for the ICV within the 80 to 120% acceptance range? Reference Source: CCP-PO-001, Table C3-9				
28. Is the Mercury regression coefficient (r) greater than or equal to 0.995? Reference Source: CCP-PO-001, Table C3-9				
29. Is continuing calibration verification (CCV) performed every 10 samples, and at the beginning and end of the run? Reference Source: CCP-PO-001, Table C3-9				
30. Is the ICP %R for the CCV within the 90 to 110% acceptance range? Reference Source: CCP-PO-001, Table C3-9				

Attachment 5 – CCP SPM S3000/S4000 Total Metals Analysis Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
31. Is the Mercury %R for the CCV within the 80 to 120% acceptance range? <b>Reference Source: CCP-PO-001, Table C3-9</b>				
32. Is there a minimum of one lab blank analyzed per analytical batch? <b>Reference Source: CCP-PO-001, Table C3-9</b>				
33. Are all lab blanks analytes $\leq 3$ the IDL? <b>Reference Source: CCP-PO-001, Table C3-9</b>				
34. Is interference correction verification performed at the beginning and end of the analytical batch or every 8 hours for ICP (12 hours for ICP/MS), whichever is more frequent? <b>Reference Source: CCP-PO-001, Table C3-9</b>				
35. Are solutions containing interference plus analytes within the 80 to 120 %R acceptance range for all analytes? <i>Note: If response is no AND sample interferences are reported on the Total Metals Analysis Data Sheets at levels <math>\geq</math> levels in the ICS(A) solution and an NCR has not already been produced at the DGL, write an NCR.</i> <b>Reference Source: CCP-PO-001, Table C3-9</b>				
36. Does the BDR include IDLs ( $\mu\text{g/L}$ ) that are $\leq$ PRDL? <b>Reference Source: CCP-PO-001, Table C3-8</b>				
37. Are analytical procedures (including data revision) used to develop these data referenced in the BDR? <b>Reference Source: CCP-PO-001, C3-10</b>				
38. Does the BDR include the operator's signature and analysis date? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
39. Are data reporting forms complete with data reported properly (i.e., data is reported in correct units, with correct significant figures, and with correct qualifying flags)? <b>Reference Source: CCP-PO-001, C3-10b(1)</b>				

Attachment 5 – CCP SPM S3000/S4000 Total Metals Analysis Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
40. Have data reporting flags been assigned properly? Reference Source: CCP-PO-001, C3-10b(1)				
41. Have the batch samples been properly preserved (cool to 4° C, + 2° C)? Reference Source: CCP-PO-001, Table C1-4				
42. Is the completed, signed, and dated Independent Technical Reviewer Checklist included in the BDR, and the independent technical reviewer was not involved in the generation or recording of the data under review? Reference Source: CCP-PO-001, Table C3-13				
43. Does the BDR contain at least one calibration standard ≤ PRQL? Reference Source: CCP-PO-001, C3-8				
44. Does the laboratory use traceable standards? Reference Source: CCP-PO-001, C3-8				
45. Has the laboratory successfully participated in the PDP? Reference Source: CCP-PO-001, C3-8				
46. Has the laboratory met the 90% completeness requirement? Reference Source: CCP-PO-001, Table C3-8				
47. Has the laboratory had acceptable demonstration of precision, accuracy, and IDLs [method performance samples] performed within the last 6 months? Reference Source: CCP-PO-001, C3-8				
Comments:				
The container QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis. The batch is complete, acceptable, and includes all supporting data and documentation required by the QAPjP.				
SPM Printed Name _____		Signature _____		Date _____

Checklist is to be re-signed only when a re-review is performed.

SPM Printed Name \_\_\_\_\_ Signature \_\_\_\_\_ Reason \_\_\_\_\_ Date \_\_\_\_\_

SPM Printed Name \_\_\_\_\_ Signature \_\_\_\_\_ Reason \_\_\_\_\_ Date \_\_\_\_\_

Attachment 6 – CCP SPM S3000/S4000 Total Non-Halogenated Volatile Organic Compound Analysis Project Level Validation Checklist and Summary

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
1. Does the Batch Data Report (BDR) contain the batch number, laboratory name, and the date of the batch report? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
2. Has a BDR Narrative been included with the BDR? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
3. Is there a cross-reference between waste container number, field sample number, and lab sample number ID; and signature release by lab personnel in the BDR? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
4. Is the BDR complete? <b>Reference Source: CCP-PO-001, C3-10b</b>				
5. List all containers that have met QAOs. <b>Reference Source: CCP-PO-001, C3-10b</b>				Container Numbers:
6. Are there 20 or less samples per analytical batch? <b>Reference Source: CCP-PO-001, C3-10</b>				
7. Is there a reference to or copy of any associated NCRs (if any) in the BDR? NA if no NCRs associated with the BDR. <b>Reference Source: CCP-PO-001, Table C3-13</b>				
8. Does the BDR contain a complete and signed copy of the COC form? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
9. Does the BDR include the date and time of analysis for each sample? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
10. Are the training qualifications for all personnel acceptable? <b>CCP-PO-001, Table C3-13</b>				
11. Are holding times between collection and analysis within the 14-day requirement? <b>Reference Source: CCP-PO-001, Table C1-4</b>				

Attachment 6 – CCP SPM S3000/S4000 Total Non-Halogenated Volatile Organic Compound Analysis Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
12. Have QC designations for samples been applied as appropriate? Reference Source: CCP-PO-001, Table C3-13				
13. Is there a minimum of one laboratory control sample (LCS) analyzed per analytical batch? Reference Source: CCP-PO-001, Table C3-5				
14. Do the %Rs for all LCS analytes meet the 60-150 %R requirements? Reference Source: CCP-PO-001, Table C3-4				
15. Is a minimum of one matrix spike/matrix spike duplicate (MS/MSD) pair analyzed per analytical batch? Note: The MSD is used in place of the laboratory duplicate. Reference Source: CCP-PO-001, Table C3-5				
16. Do the %Rs for all MS and MSD analytes meet the 60-150 %R requirements? Note: The MSD is used in place of the laboratory duplicate. Reference Source: CCP-PO-001, Table C3-4				
17. Do the MS/MSD RPDs for all analytes meet the ≤ 50 requirement? Reference Source: CCP-PO-001, Table C3-4				
18. Has the CCP Site Project Manager calculated and reported the results of the RPD and F-Test Method? Reference Source: CCP-PO-001, Section C3-3				
19. Were the applicable RPD or F-test method acceptance criteria met? Reference Source: CCP-PO-001, Section C3-3				
20. Is a minimum of one trip blank analyzed per analytical batch? Reference Source: CCP-PO-001, SW-846 8015				

Attachment 6 – CCP SPM S3000/S4000 Total Non-Halogenated Volatile Organic Compound Analysis Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
21. Are the results of the trip blank $\leq$ 3 times the program-required MDL? Reference Source: CCP-PO-001, SW-846 8015				
22. Is there a minimum of one lab blank analyzed per analytical batch? Reference Source: CCP-PO-001, Table C3-5				
23. Are all lab blank compounds $\leq$ 3 times the program-required MDL? Reference Source: CCP-PO-001, Table C3-5				
24. Are the analytical samples spiked with surrogate matrix compounds (SMCs)? Reference Source: CCP-PO-001, Table C3-5				
25. Are the SMCs %R values within specified criteria listed on the Surrogate Recovery Form included in the BDR? Reference Source: CCP-PO-001, Table C3-5				
26. Is the GC/FID three-point (minimum) initial calibration complete? Reference Source: CCP-PO-001, Table C3-5				
27. Is the $r^2 \geq 0.990$ ? Reference Source: CCP-PO-001, Table C3-5				
28. Is the continuing calibration performed at a minimum frequency of every 12 hours of operation? Reference Source: CCP-PO-001, Table C3-5				
29. Is the CCV %D $\leq$ 15% for all compounds? Reference Source: CCP-PO-001, Table C3-5				
30. Are the retention times (RTs) for the continuing calibrations $\pm 3$ standard deviations from the initial calibration per applicable SW-846 method? Reference Source: CCP-PO-001, Table C3-5				
31. Does the BDR include MDLs (mg/kg) that are $\leq$ PRQL in Table C3-4? Reference Source: CCP-PO-001, Table C3-4				

Attachment 6 – CCP SPM S3000/S4000 Total Non-Halogenated Volatile Organic Compound Analysis Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
32. Are analytical procedures (including data revision) used to develop these data referenced in the BDR? <b>Reference Source: CCP-PO-001, C3-10</b>				
33. Does the BDR include the operator's signature and analysis date? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
34. Are data reporting forms complete with data reported properly (i.e., data is reported in correct units, with correct significant figures, and with correct qualifying flags)? <b>Reference Source: CCP-PO-001, C3-10b</b>				
35. Have data reporting flags been assigned properly? <b>Reference Source: CCP-PO-001, C3-10b</b>				
36. Have the batch samples been properly preserved (cool to 4°C, ± 2°C)? <b>Reference Source: CCP-PO-001, Table C1-4</b>				
37. Is the completed, signed, and dated Independent Technical Reviewer Checklist included in the BDR, and the independent technical reviewer was not involved in the generation or recording of the data under review? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
38. Does the BDR contain at least one calibration standard ≤ PRQL? <b>Reference Source: CCP-PO-001, C3-6</b>				
39. Does the laboratory use traceable standards? <b>Reference Source: CCP-PO-001, C3-6</b>				
40. Has the laboratory had acceptable demonstration of precision, accuracy, and MDLs [method performance samples] performed within the last 6 months? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
41. Has the laboratory met the 90% completeness requirement? <b>Reference Source: CCP-PO-001, Table C3-4</b>				
42. Has the laboratory successfully participated in the PDP? <b>Reference Source: CCP-PO-001, C3-6</b>				

Attachment 6 – CCP SPM S3000/S4000 Total Non-Halogenated Volatile Organic Compound Analysis Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
43. Has the laboratory successfully participated in the PDP? Reference Source: CCP-PO-001, C3-6				
Comments:				
The container QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis. The batch is complete, acceptable, and includes all supporting data and documentation required by the QAPjP.				
SPM Printed Name	Signature			Date

Checklist is to be re-signed only when a re-review is performed.

\_\_\_\_\_  
SPM Printed Name                      Signature                      Reason                      Date

\_\_\_\_\_  
SPM Printed Name                      Signature                      Reason                      Date

Attachment 7 – CCP SPM S3000/S4000 Total Volatile Organic Compound Analysis  
Project Level Validation Checklist and Summary

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
1. Does the Batch Data Report (BDR) contain the batch number, laboratory name, and the date of the batch report? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
2. Has a BDR Narrative been included in the BDR? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
3. Is there a cross-reference between waste container number, field sample number, and lab sample number ID; and signature release by lab personnel in the BDR? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
4. Is the BDR complete? <b>Reference Source: CCP-PO-001 C3-10b</b>				
5. List all containers that have met QAOs. <b>Reference Source: CCP-PO-001, C3-10b</b>				Container Numbers:
6. Are there 20 or less samples per analytical batch? <b>Reference Source: CCP-PO-001, C3-10</b>				
7. Is there a reference to or copy of any associated NCRs (if any) in the BDR? NA if no NCRs associated with the BDR. <b>Reference Source: CCP-PO-001, Table C3-13</b>				
8. Does the BDR contain a complete and signed copy of the COC form? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
9. Does the BDR include the date and time of analysis for each sample? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
10. Are the training qualifications for all personnel acceptable? <b>CCP-PO-001, Table C3-13</b>				
11. Are holding times between collection and extraction within the 14-day requirement? <b>Reference Source: CCP-PO-001, Table C1-4</b>				
12. Have QC designations for samples been applied as appropriate? <b>Reference Source: CCP-PO-001, Table C3-13</b>				

Attachment 7 – CCP SPM S3000/S4000 Total Volatile Organic Compound Analysis  
Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
13. Is there a minimum of one laboratory control sample (LCS) analyzed per analytical batch? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
14. Are the percent recoveries (%Rs) for all LCS analytes within the acceptable range? <b>Reference Source: CCP-PO-001, Table C3-4</b>				
15. Is a minimum of one matrix spike (MS) analyzed per analytical batch? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
16. Are the %Rs for all MS compounds within the acceptable range? <b>Reference Source: CCP-PO-001, Table C3-4</b>				
17. Is a minimum of one matrix spike duplicate (MSD) analyzed per analytical batch? Note: The MSD is used in place of the laboratory duplicate. <b>Reference Source: CCP-PO-001, Table C3-5</b>				
18. Are the %Rs for all MSD compounds within the acceptable range? Note: The MSD is used in place of the laboratory duplicate <b>Reference Source: CCP-PO-001, Table C3-4</b>				
19. Do the MS/MSD relative percent differences (RPDs) for all analytes meet the requirements? <b>Reference Source: CCP-PO-001, Table C3-4</b>				
19. Has the CCP Site Project Manager calculated and reported the results of the RPD and F-Test Method? <b>Reference Source: CCP-PO-001, Section C3-3</b>				
20. Were the applicable RPD or F-test method acceptance criteria met? <b>Reference Source: CCP-PO-001, Section C3-3</b>				
21. Is a minimum of one trip blank analyzed per analytical batch? <b>Reference Source: EPA Method SW-846 8260</b>				

Attachment 7 – CCP SPM S3000/S4000 Total Volatile Organic Compound Analysis  
Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
22. Are the results of the trip blank $\leq 3$ times the program-required MDL? <b>Reference Source: EPA Method SW-846 8260</b>				
23. Is there a minimum of one lab blank analyzed per analytical batch? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
24. Are all lab blank compounds $\leq 3$ times the program-required MDL? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
25. Are the analytical samples spiked with surrogate matrix compounds (SMCs)? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
26. Are the SMCs %R values within specified criteria? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
27. Is the five-point (minimum) initial calibration complete? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
28. Is the $r^2 \geq 0.990$ ? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
29. Are the percent relative standard deviations (%RSDs) for all target analytes calibration check compounds (CCCs) less than or equal to 30%? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
30. Are the relative response factors for all target analytes System Performance Check Compounds (SPCCs) OK? Chloromethane: $\geq 0.10$ 1,1-Dichloroethane: $\geq 0.10$ Bromoform: $\geq 0.10$ Chlorobenzene: $\geq 0.30$ 1, 1, 2, 2-Tetrachloroethane: $\geq 0.30$ SW-846 Method 8260B, Section 7.3.5.4 <b>Reference Source: CCP-PO-001, Table C3-5</b>				
31. If %RSD is less than or equal to 15, is average relative response factor used? <b>Reference Source: CCP-PO-001, Table C3-5</b>				

Attachment 7 – CCP SPM S3000/S4000 Total Volatile Organic Compound Analysis  
Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
32. If %RSD is greater than 15, is regression equation generated and used? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
33. Is RRF for all non-SPCCs $\geq 0.01$ ? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
34. Were the Bromofluorobenzene (BFB) ion abundance criteria satisfied? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
35. Is the BFB Tune performed at the beginning of the run before the QC samples? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
36. Is BFB Tune performed at a minimum frequency of every 12 hours of operation? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
37. Is continuing calibration performed at a minimum frequency of every 12 hours of operation? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
38. Are the %Ds less than or equal to 20% for target analytes CCCs? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
39. Is the retention time (RT) for internal standards $\pm 30$ seconds from last daily calibration check? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
40. Is internal standard area count $>50\%$ and $<200\%$ of the last daily calibration? <b>Reference Source: CCP-PO-001, Table C3-5</b>				
41. For GC/FID, are the RTs for the continuing calibrations $\pm 3$ standard deviations from the initial calibration per applicable SW-846 method? <b>Reference Source: CCP-PO-001, Table C3-5</b>				

Attachment 7 – CCP SPM S3000/S4000 Total Volatile Organic Compound Analysis  
Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
42. Does the BDR include MDLs (mg/kg) that are ≤PRQL in Table C3-4? <b>Reference Source: CCP-PO-001, Table C3-4</b>				
43. Are analytical procedures (including data revision) used to develop the data referenced in the BDR? <b>Reference Source: CCP-PO-001, C3-10</b>				
44. Does the BDR include the operator's signature and analysis date? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
45. Are data reporting forms complete with data reported properly (i.e., data is reported in correct units, with correct significant figures, and with correct qualifying flags)? <b>Reference Source: CCP-PO-001, C3-10b</b>				
46. Have data reporting flags been assigned properly? <b>Reference Source: CCP-PO-001, C3-10b</b>				
47. Have the batch samples been properly preserved (cool to 4°C, ± 2° C)? <b>Reference Source: CCP-PO-001, Table C1-4</b>				
48. Is the completed, signed, and dated Independent Technical Reviewer Checklist included in the BDR, and the independent technical reviewer was not involved in the generation or recording of the data under review? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
49. Does the BDR contain at least one calibration standard ≤ PRQL? <b>Reference Source: CCP-PO-001, C3-6</b>				
50. Has the laboratory successfully participated in the PDP? <b>Reference Source: CCP-PO-001, C3-6</b>				
51. Does the laboratory use traceable standards? <b>Reference Source: CCP-PO-001, C3-6</b>				
52. Has the laboratory had acceptable demonstration of precision, accuracy, and MDLs [method performance samples] performed within the last 6 months? <b>Reference Source: CCP-PO-001, Table C3-5</b>				

Attachment 7 – CCP SPM S3000/S4000 Total Volatile Organic Compound Analysis  
Project Level Validation Checklist and Summary (Continued)

<b>BDR Number:</b> _____		<b>Analysis Date:</b> _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
53. Has the laboratory met the 90% completeness requirement? <b>Reference Source: CCP-PO-001, Table C3-4</b>				
54. Has the laboratory met the 90% completeness requirement? <b>Reference Source: CCP-PO-001, Table C3-4</b>				
Comments:				
The container QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis. The batch is complete, acceptable, and includes all supporting data and documentation required by the QAPjP.				
SPM Printed Name		Signature		Date

Checklist is to be re-signed only when a re-review is performed.

\_\_\_\_\_  
SPM Printed Name                      Signature                      Reason                      Date

\_\_\_\_\_  
SPM Printed Name                      Signature                      Reason                      Date

Attachment 8 – CCP SPM S3000/S4000 Total Semi-Volatile Organic Compound Analysis  
Project Level Validation Checklist and Summary

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
1. Does the Batch Data Report (BDR) contain the batch number, laboratory name, and the date of the batch report? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
2. Has a BDR Narrative been included with the BDR? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
3. Is there a cross-reference between waste container number, field sample number, and lab sample number ID; and signature release by lab personnel in the BDR? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
4. Is the BDR complete? <b>Reference Source: CCP-PO-001, C3-10b</b>				
5. List all containers that have met QAOs. <b>Reference Source: CCP-PO-001, C3-10b</b>				Container Numbers:
6. Is there a reference to or copy of any associated NCRs (if any) in the BDR? NA if no NCRs associated with the BDR. <b>Reference Source: CCP-PO-001, Table C3-13</b>				
7. Are there 20 or less samples per analytical batch? <b>Reference Source: CCP-PO-001, C3-10</b>				
8. Does the BDR contain a complete and signed copy of the COC form? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
9. Does the BDR include the date and time of analysis for each sample? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
10. Are the training qualifications for all personnel acceptable? <b>CCP-PO-001, Table C3-13</b>				
11. Are holding times between collection and extraction within the 14-day requirement? <b>Reference Source: CCP-PO-001, Table C1-4</b>				
12. Are the holding times between extraction and analysis within the 40-day requirement? <b>Reference Source: CCP-PO-001, Table C1-4</b>				

Attachment 8 – CCP SPM S3000/S4000 Total Semi-Volatile Organic Compound Analysis  
Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
13. Have QC designations for samples been applied as appropriate? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
14. Is there a minimum of one laboratory control sample (LCS) analyzed per analytical batch? <b>Reference Source: CCP-PO-001, Table C3-7</b>				
15. Are the percent recoveries (%Rs) for all LCS analytes within the acceptable range? <b>Reference Source: CCP-PO-001, Table C3-6</b>				
16. Is a minimum of one matrix spike (MS) analyzed per analytical batch? <b>Reference Source: CCP-PO-001, Table C3-6</b>				
17. Are the %Rs for all MS compounds within the acceptance range? <b>Reference Source: CCP-PO-001, Table C3-7</b>				
18. Is a minimum of one matrix spike duplicate (MSD) analyzed per analytical batch? Note: The MSD is used in place of the laboratory duplicate. <b>Reference Source: CCP-PO-001, Table C3-7</b>				
19. Are the %Rs for all MSD compounds within the acceptance range? Note: The MSD is used in place of the laboratory duplicate. <b>Reference Source: CCP-PO-001, Table C3-6</b>				
20. Do the MS/MSD relative percent differences (RPDs) for all analytes meet the requirements? <b>Reference Source: CCP-PO-001, Table C3-6</b>				
21. Has the CCP Site Project Manager calculated and reported the results of the RPD and F-Test Method? <b>Reference Source: CCP-PO-001, Section C3-3</b>				
22. Were the applicable RPD or F-test method acceptance criteria met? <b>Reference Source: CCP-PO-001, Section C3-3</b>				

Attachment 8 – CCP SPM S3000/S4000 Total Semi-Volatile Organic Compound Analysis  
Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
23. Is there a minimum of one lab blank analyzed per analytical batch? Reference Source: CCP-PO-001, Table C3-7				
24. Are all lab blank compounds $\leq 3$ times the program-required MDL? Reference Source: CCP-PO-001, Table C3-7				
25. Are the analytical samples spiked with surrogate matrix compounds (SMCs)? Reference Source: CCP-PO-001, Table C3-7				
26. Are the SMCs %R values within specified criteria listed on the Surrogate Recovery Form included in the BDR? Reference Source: CCP-PO-001, Table C3-7				
27. Is the five-point (minimum) initial calibration complete? Reference Source: CCP-PO-001, Table C3-7				
28. Are the percent relative standard deviations (%RSDs) for all target analytes calibration check compounds (CCCs) less than or equal to 30%? Reference Source: CCP-PO-001, Table C3-7				
29. Are the %RSDs for all other compounds $\leq 15\%$ ? Reference Source: CCP-PO-001, Table C3-7				
30. Are the relative response factors (RRFs) for all target analytes System Performance Check Compounds (SPCCs) $\geq 0.05$ ? Reference Source: CCP-PO-001, Table C3-7 and SW 846				
31. If %RSD is less than or equal to 15, is average relative response factor used? Reference Source: CCP-PO-001, Table C3-7				
32. When an alternative curve is used, is the $r^2 \geq 0.990$ ? NA if %RSD is less than or equal to 15. Reference Source: CCP-PO-001, Table C3-7				

Attachment 8 – CCP SPM S3000/S4000 Total Semi-Volatile Organic Compound Analysis  
Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
33. If %RSD is greater than 15, is regression equation generated and used? NA if %RSD is less than or equal to 15. <b>Reference Source: CCP-PO-001, Table C3-7</b>				
34. Is RRF for all non-SPCCs $\geq 0.01$ ? <b>Reference Source: CCP-PO-001, Table C3-7</b>				
35. Were the decafluorotriphenylphosphine (DFTPP) ion abundance criteria satisfied? <b>Reference Source: CCP-PO-001, Table C3-7</b>				
36. Is the DFTPP Tune performed at the beginning of the run before the QC samples? <b>Reference Source: CCP-PO-001, Table C3-7</b>				
37. Is DFTPP tune performed at a minimum frequency of every 12 hours of operation? <b>Reference Source: CCP-PO-001, Table C3-7</b>				
38. Were the ion abundance criteria satisfied? <b>Reference Source: CCP-PO-001, Table C3-7</b>				
39. Is continuing calibration performed at a minimum frequency of every 12 hours of operation? <b>Reference Source: CCP-PO-001, Table C3-7</b>				
40. Are the %Ds for the continuing calibration less than or equal to 20% for target analytes CCCs? <b>Reference Source: CCP-PO-001, Table C3-7</b>				
41. Is the RT for the continuing calibration internal standards $\pm 30$ seconds from last daily calibration check? <b>Reference Source: CCP-PO-001, Table C3-7</b>				
42. Is the continuing calibration internal standard area count $>50\%$ and $<200\%$ of the last daily calibration? <b>Reference Source: CCP-PO-001, Table C3-7</b>				

Attachment 8 – CCP SPM S3000/S4000 Total Semi-Volatile Organic Compound Analysis  
Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
43. Does the BDR include MDLs (mg/kg) that are ≤ PRQL in Table C3-6? <b>Reference Source: CCP-PO-001, Table C3-6</b>				
44. Are analytical procedures (including data revision) used to develop the data referenced in the BDR? <b>Reference Source: CCP-PO-001, C3-10</b>				
45. Does the BDR include the operator's signature and analysis date? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
46. Are data reporting forms complete with data reported properly (i.e., data is reported in correct units, with correct significant figures, and with correct qualifying flags)? <b>Reference Source: CCP-PO-001, C3-10b</b>				
47. Have data reporting flags been assigned properly? <b>Reference Source: CCP-PO-001, C3-10b</b>				
48. Have the batch samples been properly preserved (cool to 4°C, ± 2° C)? <b>Reference Source: CCP-PO-001, Table C1-4</b>				
49. Is the completed, signed, and dated Independent Technical Reviewer Checklist included in the BDR, and the independent technical reviewer was not involved in the generation or recording of the data under review? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
50. Does the initial calibration contain at least one calibration standard less than or equal to the PRQL? <b>Reference Source: CCP-PO-001, C3-7</b>				
51. Has the laboratory successfully participated in the PDP? <b>Reference Source: CCP-PO-001, C3-7</b>				
52. Has the laboratory met the 90% completeness requirement? <b>Reference Source: CCP-PO-001, Table C3-6</b>				
53. Does the laboratory use traceable standards? <b>Reference Source: CCP-PO-001, C3-7</b>				

Attachment 8 – CCP SPM S3000/S4000 Total Semi-Volatile Organic Compound Analysis  
Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
54. Has the laboratory had acceptable demonstration of precision, accuracy, and MDLs [method performance samples] performed within the last 6 months? Reference Source: CCP-PO-001, Table C3-7				
Comments:				
The container QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis. The batch is complete, acceptable, and includes all supporting data and documentation required by the QAPjP.				
SPM Printed Name _____		Signature _____		Date _____

Checklist is to be re-signed only when a re-review is performed.

\_\_\_\_\_  
SPM Printed Name                      Signature                      Reason                      Date

\_\_\_\_\_  
SPM Printed Name                      Signature                      Reason                      Date

Attachment 9 – CCP SPM HSG Summa Sampling Project Level Validation Checklist and Summary

BDR Number: _____		Sampling Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
1. Does the Batch Data Report (BDR) contain the batch number? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
2. Is the BDR complete according to the BDR Table of Contents? <b>Reference Source: CCP-PO-001, C3-10b</b>				
3. Does the BDR contain the BDR date? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
4. Is the sample matrix and type included for each sample in the BDR? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
5. Is the BDR complete as defined by the process procedures? <b>Reference Source: CCP-PO-001, C3-10, CCP Technical Procedures</b>				
6. List all containers that have met QAOs. <b>Reference Source: CCP-PO-001, Table C3-12</b>				Container Numbers:
7. Does the BDR include the requested analyses and the name of the laboratory? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
8. Is there a reference to or copy of any associated NCRs (if any) in the BDR? NA if no NCRs associated with the BDR. <b>Reference Source: CCP-PO-001, Table C3-12</b>				
9. Does the BDR include the point of origin for sampling (e.g., building number, room)? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
10. Is the sample size included in the BDR? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
11. Does the BDR include the sample location of each container? Note: Location within container is where the sample is taken. The BDR must specify what layer of confinement was sampled (e.g., under the lid). <b>Reference Source: CCP-PO-001, Table C3-12</b>				

Attachment 9 – CCP SPM HSG Summa Sampling Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Sampling Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
12. Is the person collecting the sample identified in the BDR and qualified? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
13. Does the BDR contain a chain of custody record? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
14. Does the chain of custody form correctly identify the Waste Stream ID? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
15. Is there a reference to sampling equipment numbers or lot numbers for disposable equipment? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
16. Is there verification of rigid liner venting? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
17. Does the BDR include the operator/sampler signature and date and time of sampling for each sample? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
18. Are there 20 samples or less (excluding QC) in the batch and all samples collected within 14 days of the first sample collected? <b>Reference Source: CCP-PO-001, C1-1b</b>				
19. Are the correct revisions of the procedures used and identified? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
20. Are all data reporting forms complete with data reported properly (correct units and significant figures)? <b>Reference Source: CCP-PO-001, C3-10b(1)</b>				
21. Is there a cross-reference between waste container number and field sample number? <b>Reference Source: CCP-PO-001, C1-5</b>				
22. Have the samples been properly preserved (0-40° C)? <b>Reference Source: CCP-PO-001, Table C1-1</b>				

Attachment 9 – CCP SPM HSG Summa Sampling Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Sampling Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
23. Have the samples been properly preserved (0-40° C)? <b>Reference Source: CCP-PO-001, Table C1-1</b>				
24. Has the correct DAC scenario and waste packaging configuration been selected? <b>Reference Source: CCP-PO-001, C3-2</b>				
25. Do the samples meet the required DAC equilibrium times? <b>Reference Source: CCP-PO-001, C3-2</b>				
26. Prior to canister use was the following performed: equipment blank, sample canister equipment cleaning and leak check, and field reference standard (or on-line control standard) performed as required? <b>Reference Source: CCP-PO-001, C1-1b</b>				
27. Has one field blank per batch been collected? <b>Reference Source: CCP-PO-001, Table C1-2</b>				
28. Has a minimum of one equipment blank been collected for the applicable cleaning batch blanks? <b>Reference Source: CCP-PO-001, Table C1-2</b>				
29. Has one field duplicate per batch been collected? <b>Reference Source: CCP-PO-001, Table C1-2</b>				
30. Has the canister pressure and ambient temperature and pressure been recorded? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
31. Have the ambient pressure and temperature sensors been calibrated? <b>Reference Source: CCP-PO-001, C1-1d</b>				
32. Have all the waste containers equilibrated for a minimum of 72 hours at 18° C or higher? <b>Reference Source: CCP-PO-001, C1-1a</b>				
33. Is the completed, signed, and dated Independent Technical Reviewer Checklist in the BDR? <b>Reference Source: CCP-PO-001, Table C3-12</b>				

Attachment 9 – CCP SPM HSG Summa Sampling Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Sampling Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
34. Is the completed, signed, and dated Independent Technical Reviewer Checklist in the BDR, and the independent technical reviewer was not involved in the generation or recording of the data under review? <b>Reference Source: CCP-PO-001, Table C3-12</b>				
Comments:				
The container QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis. The batch is complete, acceptable, and includes all supporting data and documentation required by the QAPjP.				
SPM Printed Name _____		Signature _____		Date _____

Checklist is to be re-signed only when a re-review is performed.

_____	_____	_____	_____
SPM Printed Name	Signature	Reason	Date
_____	_____	_____	_____
SPM Printed Name	Signature	Reason	Date

Attachment 10 – CCP SPM Summa HSG Analysis Project Level Validation Checklist and Summary

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
1. Does the Batch Data Report (BDR) contain the batch number, laboratory name, and the date of the batch report? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
2. Is the BDR complete according to the BDR Table of Contents? <b>Reference Source: CCP-PO-001, C3-10b</b>				
3. Has a BDR Narrative been included with the BDR? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
4. Are the correct revisions of the procedures used and identified? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
5. List all containers that have met the QAOs. <b>Reference Source: CCP-PO-001, C3-10b</b>				Container Numbers:
6. Is there a reference to or copy of any associated NCRs (if any) in the BDR? NA if no NCRS associated with the BDR. <b>Reference Source: CCP-PO-001, Table C3-13</b>				
7. Is the completed, signed, and dated Independent Technical Reviewer checklist included in the BDR, and the independent technical reviewer was not involved in the generation or recording of the data under review? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
8. Does the BDR include the operator's signature and analysis date? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
9. Are there 20 laboratory samples or less in the analytical batch (excluding QC)? <b>Reference Source: CCP-PO-001, C3-10</b>				
10. Does the chain of custody (COC) form correctly identify the Waste Stream ID? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
11. Does the BDR contain a complete and signed copy of the COC form? <b>Reference Source: CCP-PO-001, Table C3-13</b>				

Attachment 10 – CCP SPM Summa HSG Analysis Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
12. Is there a cross-reference between waste container number, field sample number, and lab sample number ID; and signature release by lab personnel in the batch report? <b>Reference Source: CCP-PO-001, C1-5</b>				
13. Does the BDR contain gas sample canister tags for each sample that are properly filled out? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
14. Have the samples been properly preserved (0-40° C)? <b>Reference Source: CCP-PO-001, Table C1-1</b>				
15. Does the BDR include the date and time of analysis for each sample? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
16. Have data reporting flags been assigned properly? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
17. Did the batch report analysis consist of all the target compounds? <b>Reference Source: CCP-PO-001, Table C3-2</b>				
18. Is there a minimum of one laboratory (method) blank per analytical batch with all analytes $\leq 3 \times$ MDL? <b>Reference Source: CCP-PO-001, Table C3-3</b>				
19. Are all target analytes in field blanks and equipment blanks (if any) $\leq 3 \times$ instrument MDL as listed in CCP-PO-001 Table C3-2? <b>Reference Source: CCP-PO-001, Table C1-3</b>				
20. Is a minimum of one laboratory control standard (LCS) analyzed per analytical batch and are the percent recoveries (%Rs) within 70-130%? <b>Reference Source: CCP-PO-001, Table C3-3</b>				
21. Is there a minimum of one field duplicate analyzed per sampling batch including in the analytical batch? <b>Reference Source: CCP-PO-001, Table C1-3</b>				

Attachment 10 – CCP SPM Summa HSG Analysis Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
22. For field sample and field duplicate results that are both > PRQL, are the relative percent differences (RPDs) ≤ 25%? <b>Reference Source: CCP-PO-001, Table C3-2</b>				
23. Is there a minimum of one laboratory duplicate (LD) analyzed per analytical batch? <b>Reference Source: CCP-PO-001, Table C3-3</b>				
24. For laboratory duplicate results that are > PRQL (or for laboratory control standard and replicate laboratory control standard results > PRQL), is the RPD ≤ 25%? <b>Reference Source: CCP-PO-001, Table C3-3</b>				
25. If no target analytes were present greater than the PRQL, was a replicate LCS satisfactorily performed? <b>Reference Source: CCP-PO-001, Table C3-3</b>				
26. Does the field reference standard (FRS) contain at least six analytes and are the %Rs within 70-130%? <b>Reference Source: CCP-PO-001, C1-1b and Table C1-3</b>				
27. For GC/MS analyses, was the BFB tune performed at a minimum of every 12 hours and were the ion abundance criteria satisfied? <b>Reference Source: CCP-PO-001, Table C3-3</b>				
28. For GC/MS analyses, for the five-point initial calibration, is the %RSD for all compounds < 35%? <b>Reference Source: CCP-PO-001, Table C3-3</b>				
29. For GC/MS analyses, is one of the calibration standards less than the PRQL? <b>Reference Source: CCP-PO-001, Section C3-5</b>				
30. For GC/MS analyses, is the continuing calibration performed at a minimum frequency of every 12 hours of operation? <b>Reference Source: CCP-PO-001, Table C3-3</b>				

Attachment 10 – CCP SPM Summa HSG Analysis Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Analysis Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
31. For GC/MS analyses, are the continuing calibration internal standard area counts between 50-200% of ICAL? <b>Reference Source: CCP-PO-001, Table C3-3</b>				
32. For GC/MS analyses, are non-target compounds identified as Tentatively Identified Compounds (TICs)? <b>Reference Source: CCP-PO-001, C-3a</b>				
33. Does the BDR contain all of the target compounds appropriate for the waste stream? <b>Reference Source: CCP-PO-001, Table C3-2/AK Summary Report</b>				
34. For GC/MS analyses, is the continuing calibration %D for all compounds $\leq$ 30% of the ICAL? <b>Reference Source: CCP-PO-001, Table C3-3</b>				
35. For methanol analysis by GC/FID, does the initial calibration (ICAL) have a minimum of five points, is the %R within 70-130%, and is the correlation coefficient $\geq$ 0.990? NA if not methanol analysis by GC/FID. <b>Reference Source: CCP-PO-001, Table C3-3</b>				
36. For methanol analysis by GC/FID, is the continuing calibration (CC) analyzed every 12 hours, is the %D $\leq$ 15%, is the %R within 85-115%, and is the CC retention time within the ICAL window? NA if not methanol analysis by GC/FID. <b>Reference Source: CCP-PO-001, Table C3-2</b>				
37. For methanol analysis by GC/FID, is one of the calibration standards less than the PRQL? <b>Reference Source: CCP-PO-001, C3-5</b>				
38. Are all data reporting forms complete with data reported properly (correct units and significant figures)? <b>Reference Source: CCP-PO-001, C3-10b</b>				
39. Has the laboratory successfully participated in the latest PDP? <b>Reference Source: CCP-PO-001, C3-5</b>				

Attachment 10 – CCP SPM Summa HSG Analysis Project Level Validation Checklist and Summary (Continued)

<b>BDR Number:</b> _____		<b>Analysis Date:</b> _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
40. Has the laboratory met the 90% completeness requirement? <b>Reference Source: CCP-PO-001, Table C3-2</b>				
41. Does the laboratory use traceable standards? <b>Reference Source: CCP-PO-001, C3-5</b>				
42. Has the laboratory had acceptable demonstration of precision, accuracy, and MDLs [method performance samples] performed within the last 6 months? <b>Reference Source: CCP-PO-001, Table C3-3</b>				
43. Have QC designations for samples been applied as appropriate? <b>Reference Source: CCP-PO-001, Table C3-13</b>				
Comments:				
The container QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis. The batch is complete, acceptable, and includes all supporting data and documentation required by the QAPjP.				
SPM Printed Name _____		Signature _____		Date _____

Checklist is to be re-signed only when a re-review is performed.

\_\_\_\_\_  
SPM Printed Name                      Signature                      Reason                      Date

\_\_\_\_\_  
SPM Printed Name                      Signature                      Reason                      Date

Attachment 11 – CCP SPM Off-Site Source Recovery Sealed Source Radiological Characterization Project Level Validation Checklist and Summary

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
1. Are the personnel training records acceptable? <b>Reference Source: Site applicable LOQI</b>				
2. Does the Batch Data Report (BDR) include the name of the facility? <b>Reference Source: CCP-PO-002</b>				
3. Does the BDR include a standard cover sheet? <b>Reference Source: CCP-PO-002</b>				
4. Does the BDR include a Table of Contents? <b>Reference Source: CCP-PO-002</b>				
5. Does the BDR include a batch number? <b>Reference Source: CCP-PO-002</b>				
6. Does the BDR include a listing of all waste container numbers in the batch? <b>Reference Source: CCP-PO-002</b>				
7. List all containers. <b>Reference Source: CCP-PO-002</b>				Container Numbers:
8. Does the BDR include a Container Characterization Report sheet(s) for each container in the batch? <b>Reference Source: CCP-PO-002</b>				
9. Is there a reference to or copy of associated NCRs (if any) in the BDR? NA if no NCRs associated with the BDR. <b>Reference Source: CCP-PO-002</b>				
10. Does the BDR include the implementing procedure and revision numbers? <b>Reference Source: CCP-PO-002</b>				
11. Does the BDR include a completed, signed, and dated Independent Technical Review Checklist, and the independent technical reviewer was not involved in the generation or recording of the data under review? <b>Reference Source: CCP-PO-002</b>				
12. Does the waste meet the definition of sealed sources per 10 CFR 30.4 and 10 CFR 835.2 (effective January 1, 2004) and documentation included with the AK information? <b>Reference Source: CCP-PO-001, C4-2</b>				

Attachment 11 – CCP SPM Off-Site Source Recovery Sealed Source Radiological Characterization Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
13. Is the sealed source a US DOT Special Form Class 7 (Radioactive Material) per 49 CFR 34.27 (effective January 1, 2004) and is this documented in the AK information? <b>Reference Source: CCP-PO-001, C4-2</b>				
14. Is the integrity of each sealed source validated by documented contamination survey results to meet the requirements of 10 CFR 34.27 (effective January 1, 2004), and is assembled as part of AK documentation? <b>Reference Source: CCP-PO-001, C4-2</b>				
15. Does the AK information document that no VOC or VOC-bearing material are constituents of the waste? <b>Reference Source: CCP-PO-001, C4-2</b>				
16. Does the AK information document that the outer casing of the sealed source is a non-VOC bearing material and is this verified during VE? <b>Reference Source: CCP-PO-001, C4-2</b>				
17. Is the Title "Characterization Data Sheet" included on each data sheet? <b>Reference Source: CCP-PO-002</b>				
18. Is the waste container number included on each data sheet? <b>Reference Source: CCP-PO-002</b>				
19. Is the run date included on each data sheet? <b>Reference Source: CCP-PO-002</b>				
20. Is the TRU alpha activity concentration (Ci/g) included on each data sheet? <b>Reference Source: CCP-PO-002</b>				
21. Is the Total Pu-239 equivalent activity (PE-Ci) included on each data sheet? <b>Reference Source: CCP-PO-002</b>				
22. Is the Total FGE (g) and associated TMU included on each data sheet? <b>Reference Source: CCP-PO-002</b>				
23. Is the Decay Heat (W) and associated TMU included on each data sheet? <b>Reference Source: CCP-PO-002</b>				
24. Are the activities and/or masses of individual radioisotopes and associated TMUs (curies and/or grams) included on each data sheet? <b>Reference Source: CCP-PO-002</b>				

Attachment 11 – CCP SPM Off-Site Source Recovery Sealed Source Radiological Characterization Project Level Validation Checklist and Summary (Continued)

BDR Number: _____		Examination Date: _____		
Description of Criteria Reviewed	Criteria Met?			Comments/Qualifiers
	YES	NO	NA	
25. Is the method of expressing TMU specified? Reference Source: CCP-PO-002				
26. Are the ten WIPP tracked radionuclides of 241Am, 238Pu, 239Pu, 240Pu, 242Pu, 233U, 234U, 238U, 90Sr, 137Cs identified and reported as present or absent? Reference Source: CCP-PO-002				
27. Is 235U (in order to calculate FGE) reported as present or absent? Reference Source: CCP-PO-002				
28. Is the TRU Alpha activity concentration >100 nCi/g? Reference Source: CCP-PO-002				
29. Is the Fissile Mass ≤ FGE limit? Reference Source: CCP-PO-002				
30. If 235U is reported as present, is 234U reported as present? NA if 235U is not present. Reference Source: CCP-PO-002				
Comments:				
The container QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis. The batch is complete, acceptable, and includes all supporting data and documentation required by the QAPjP.				
SPM Printed Name		Signature		Date

Checklist is to be re-signed only when a re-review is performed.

_____	_____	_____	_____
SPM Printed Name	Signature	Reason	Date
_____	_____	_____	_____
SPM Printed Name	Signature	Reason	Date