Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221
January 9, 2004

Mr. Steve Zappe, WIPP Project Leader
Hazardous Waste Permits Program
Hazardous Waste Bureau
New Mexico Environment Department
2905 E. Rodeo Park Dr. Bldg. 1
Santa Fe, New Mexico 87505-6303

Subject: WITHDRAWAL OF THE DATA MANAGEMENT PERMIT MODIFICATION REQUEST

Dear Mr. Zappe:

The purpose of this letter is to withdraw the Data Management Permit Modification Request (Data Management PMR) submitted to the New Mexico Environment Department on June 28, 2002. The Energy and Water Development Appropriations Act for Fiscal Year 2004, Pub.L. 108-137, Section 311 requires submittal of a Permit Modification Request to revise the Waste Analysis Plan (WAP). The Permittees' planned submittal of a permit modification request to revise the WAP will eliminate the need for further consideration of the Data Management PMR. Therefore, the Permittees request that the Data Management PMR be withdrawn from further consideration.

Feel free to contact Mr. Kerry Watson at (505) 234-7357, if you have any questions.

Sincerely,

Dr. I. R. Triay, Manager
Carlsbad Field Office

Steven D. Warren, General Manager
Washington TRU Solutions, LLC

cc:
J. Kieling, NMED
S. Martin, NMED
C. Walker, Trinity Engineering
E. Rose, CBFO
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K. Dunbar, WRES (Operating Record)
W. Most, WRES
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G. Johnson, WTS
CBFO M&RC

CBFO:OOM:IRT:JGW:04-0404:UFC:5822

Class 2 Permit Modification Request

Update of the Waste Analysis Plan and Associated Documents with Emphasis on Data Management Requirements

Waste Isolation Pilot Plant
Carlsbad, New Mexico

WIPP HWFP # NM4890139088-TSDF

Transmittal Letter

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

JUN 27 2002

Mr. Steve Zappe, Project Leader (WIPP)
Hazardous Waste Permits Program
Hazardous Waste Bureau
New Mexico Environmental Department
2905 E. Rodeo Park Dr., Bldg. 1
Santa Fe, New Mexico 87505-6303

RE: Request for Permit Modification to the Hazardous Waste Facility Permit, Permit Number NM4890139088-TSDF, Update of the Waste Analysis Plan and Associated Documents with Emphasis on Data Management Requirements

Dear Mr. Zappe:

The purpose of this letter is to submit a request for a permit modification to the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), Number: NM4890139088-TSDF. This request is being submitted by the U.S. Department of Energy, Carlsbad Field Office (CBFO) and Westinghouse TRU Solutions LLC. The proposed changes in this Permit Modification Request (PMR) do not compromise worker safety, human health, or the environment. The modification includes the following:

- Add the option for electronic data review, validation, and verification;
  Revise reviewer responsibilities;
  Eliminate the Waste Stream Characterization Package;
  Eliminate quarterly repeat of data review, validation, and verification;
  Clarify data management inconsistencies;
  Reorganize data management portions of Attachment B and Attachment B3;
- Add the option for use of barcodes in lieu of sample tags or labels;
- Add the option for use of electronic rather than hard copies of records; and
- Associated changes, such as referencing information rather than repeating it.

The Permittees are submitting this PMR in accordance with 20.4.1.900 NMAC incorporating 40 CFR 270.42(d) for *other modifications*, and request that the NMED make a determination that the PMR be reviewed as a Class 2 modification. The Permittees believe that the proposed changes are very similar to other changes classified as Class 2 modifications in accordance with 20.4.1.900 NMAC incorporating 40 CFR 270.42, Appendix I. Specifically, most of the proposed changes would be addressed by item B.2.b *Other changes to analytical quality assurance/control plan.* The changes also incorporate technological advancements, which are included as Class 2 modifications in accordance with 20.4.1.900 NMAC incorporating 40 CFR 270.42(d)(2)(ii). Additional information regarding classification is found in the enclosed permit modification request.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

If you have any questions regarding this permit modification, please contact Mr. Kerry Watson at (505) 234-7357 or Mr. Jody Plum at (505) 234-7462.

Sincerely,

Dr. Inés Triay, CBFO Manager
U.S. Department of Energy

FOR
J. L. Lee, General Manager
Westinghouse TRU Solutions, LLC

Enclosure

cc: w/enclosure
C. Walker, Techlaw

cc: w/o enclosure
J. Bearzi, NMED
J. Kieling, NMED

CBFO:ORC:HLP:VW:02-1160:UFC:5486

Table of Contents

Acronyms and Abbreviations

%C	Percent Complete
%D	Percent Difference
%R	Percent Recovery
AK	Acceptable Knowledge
CAR	Corrective Action Report
CBFO	Carlsbad Field Office
CFR	Code of Federal Regulations
CH	Contact-Handled
COC	Chain of Custody
CVAA	Cold Vapor Atomic Absorption
D&D	Decontamination and Decommissioning
DA	Data Administrator
DOE	Department of Energy
DQO	Data Quality Objective
EPA	Environmental Protection Agency
FRC	Federal Records Center
FTIRS	Fourier Transform Infrared Spectroscopy
GC/MS	Gas Chromatography/Mass Spectroscopy
GC/FID	Gas Chromatography/Flame Ionization Detector
HGAA	Hydride Generation Atomic Absorption
HWFP	Hazardous Waste Facility Permit
ICP MS	Inductively Coupled Plasma-Mass Spectrometry
ID	Identification
IDL	Instrument Detection Limit
ITR	Independent Technical Reviewer
LDR	Land Disposal Restriction
MDL	Method Detection Limit
NIST	National Institute of Standards and Technology
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
OVA	Organic Vapor Analyzer
PCB	Polychlorinated Biphenyl
PDP	Performance Demonstration Program
PMR	Permit Modification Request
PRDL	Program Required Detection Limit
PRQL	Program Required Quantitation Limit
QA	Quality Assurance
QAO	Quality Assurance Objective
QAPD	Quality Assurance Program Description
QAPjP	Quality Assurance Project Plan
QC	Quality Control
R&D	Research and Development
RCRA	Resource Conservation and Recovery Act
RH	Remote-Handled
RIDS	Records Inventory and Disposition Schedule
RPD	Relative Percent Difference

RSD	Relative Standard Deviation
RTL	Regulatory Threshold Limit
SPM	Site Project Manager
SOP	Standard Operating Procedure
SVOC	Semivolatile Organic Compound
SWB	Standard Waste Box
TC	Toxicity Characteristic
TCLP	Toxicity Characteristic Leaching Procedure
TDOP	Ten Drum Overpack
TIC	Tentatively Identified Compound
TRU	Transuranic
TRUCON	Transuranic Content
TRUPACT-II	Transuranic Packaging Transporter-model II
TSDF	Treatment, Storage, and Disposal Facility
TWBIR	Transuranic Waste Baseline Inventory Report
UCL_{90}	90% upper confidence limit
VE	Visual Examination
VOC	Volatile Organic Compound
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan
WHB	Waste Handling Building
WIPP	Waste Isolation Pilot Plant
WTS	Westinghouse TRU Solutions, LLC
WWIS	WIPP Waste Information System

Overview of the Permit Modification Request

This document contains a Permit Modification Request (PMR) for the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), Permit Number NM4890139088-TSDF, hereinafter referred to as the WIPP HWFP. This PMR addresses changes to the Waste Analysis Plan (WAP) and associated documents, with emphasis on data management requirements.

This PMR is being submitted by the U.S. Department of Energy (DOE), Carlsbad Field Office (CBFO) and Westinghouse TRU Solutions, LLC (WTS), collectively referred to as the Permittees, in accordance with the WIPP HWFP Condition I.B.1. The modification includes the following:

1. Add the option for electronic data review, validation, and verification;
2. Revise reviewer responsibilities;
3. Eliminate the Waste Stream Characterization Package;
4. Eliminate quarterly repeat of data review, validation, and verification;
5. Clarify data management inconsistencies;
6. Reorganize data management portions of Attachment B and Attachment B3;
7. Add the option for use of barcodes in lieu of sample tags or labels;
8. Add the option for use of electronic rather than hard copies of records; and
9. Associated changes, such as referencing information rather than repeating it.

These changes are described in more detail in Attachment A, Table of Changes. A crosswalk of activities and the current and proposed permit locations is found in Attachment H. These changes do not reduce the ability of the Permittees to provide continued protection to human health and the environment.

The requested modifications to the WIPP HWFP and related supporting documents are provided in the following sections of the PMR. The proposed modifications to the text of the WIPP HWFP have been identified using a double underline for new information added and a ~~strikeout~~ font for information proposed for deletion. All direct quotations are indicated by using italicized text.

The following information specifically addresses how submission of this PMR complies with WIPP HWFP Condition I.B.1.

1. 20.4.1.900 New Mexico Administrative Code (NMAC) (incorporating 40 Code of Federal Regulations (CFR) Subpart D) requires the applicant to describe the exact change to be made to the WIPP HWFP conditions and supporting documents referenced by the WIPP HWFP.

The exact, proposed changes to the WIPP HWFP are found in Attachment B through Attachment F of this PMR as follows:

- Attachment B - proposed changes to WIPP HWFP Conditions II.C.1.g and II.C.2.a, and addition of Condition II.C.5

- Attachment C - proposed changes to Attachment B of the WIPP HWFP. Due to the proposed changes reorganization of sections, Attachment B of the WIPP HWFP is included in its entirety.
- Attachment D - proposed changes to Attachment B1 of the WIPP HWFP, Section B1-4
- Attachment E - proposed changes to Attachment B3 of the WIPP HWFP. Due to the proposed reorganization of sections, Attachment B3 of the WIPP HWFP is included in its entirety.
- Attachment F - proposed changes to Attachment B6 of the WIPP HWFP.
    - Proposed changes to text of WIPP HWFP Attachment B6, Sections B6-2, ¶1; B6-3, ¶2, Bullet 8; B6-4, last ¶
    - Proposed changes to Table B6-1. Due to the changes resulting from reorganization of attachments B and B3 of the WIPP HWFP, Table B6-1 of Attachment B6 of the WIPP HWFP is included in its entirety
    - Proposed changes to Tables B6-2 through B6-6 of Attachment B6 of the WIPP HWFP: Items 123 and 126 of Table B6-2; Item 151 of Table B6-3; Items 184, 209, 221, and 222 of Table B6-4; Items 245, 246, 263, 264, 276, 277, 278, 279, 280, 281, 282, and 283 of Table B6-5; and Item 293 of Table B6-6.

2. 20.4.1.900 NMAC (incorporating 40 CFR Subpart D) requires the applicant to identify the permit modification request classification.

The Permittees are submitting the PMR in accordance with 20.4.1.900 NMAC incorporating 40 CFR 270.42(d) for *other modifications*, and request that the NMED make a determination that the PMR be reviewed as a Class 2 modification. The Permittees believe that the proposed changes are very similar to other changes classified as Class 2 modifications in accordance with 20.4.1.900 NMAC incorporating 40 CFR 270.42, Appendix I. Specifically, most of the proposed changes would be addressed by item B.2.b *Other changes to analytical quality assurance/control plan*. The changes also incorporate technological advancements, which are included as Class 2 modifications in accordance with 20.4.1.900 NMAC incorporating 40 CFR 270.42(d)(2)(ii).

The Permittees' rationale for the proposed Class 2 assignment is as follows. The majority of the proposed changes are directed at the collection, validation, and management of data associated with the WIPP HWFP Waste Analysis Plan, Permit Attachments B through B6. Specifically, most changes are in or are related to Permit Attachment B3, formerly titled *Quality Assurance Objectives and Data Validation Techniques for Waste Characterization Sampling and Analytical Methods,* with the proposed new title of *Waste Analysis Quality Assurance/Quality Control* . In most instances, the Permittees are moving, consolidating, and clarifying existing permit text in order to make the existing conditions clearer to the generator/storage sites. Because requirements are being proposed for elimination, this modification does not qualify for Class 1 processing. Likewise, the changes do not substantially alter the facility or its operations. In fact, the same data that are required under the existing permit to be reported to the Permittees prior to shipment of waste are required under the proposed modification. This modification proposes to allow generator sites to implement electronic data management systems in lieu of manual systems. Because this concept is new

to the State of New Mexico, the Permittees believe there is benefit in employing the expanded public comment afforded by the Class 2 process.

3. 20.4.1.900 NMAC (incorporating 40 CFR Subpart D) requires the applicant to explain why the modification is needed.

This PMR proposes changes identified since the WIPP HWFP was originally issued. The changes are needed to clarify current data management requirements, reduce the level of redundancy in the WIPP HWFP, allow for the use of computerized data evaluation, and reduce potential for human error. General explanations for the types of changes included in this PMR are discussed in the following paragraphs.

Electronic review, validation, and verification: This PMR incorporates the option for use of electronic review, validation, verification by generator/storage sites. Generator/storage sites have requested the option to utilize an automated electronic system to complete the review, validation, and verification responsibilities of the Technical Supervisor, Quality Assurance (QA) Officer, Site Project QA Officer, and Site Project Manager (SPM). The Independent Technical Reviewer would continue to review and release the data as currently required. Following completion of the electronic data evaluation activities, any omissions would be rectified and problems with the data would be addressed using an appropriate nonconformance process. The electronically-evaluated data would be released by the Site Project Manager. In order to accommodate the generator/storage sites' request, this PMR proposes that releases may be via electronic approval, electronic signature, or hard copy signature.

The electronic system must be developed and tested in compliance with "Quality Assurance Requirements of Computer Software for Nuclear Applications (NQA-2)"[1]. Prior to implementation of the electronic system, the generator/storage site must prepare the following items (required by NQA-2), which will be subject to the audit process:

- Software Quality Assurance Plan
- Software Requirements Documentation
- Software Design and Implementation Documentation
- Software Verification and Validation Documentation
- User Documentation

The purpose of these documents is to ensure that the electronic system is functioning properly prior to certification for use. The documents must address software QA checks employed to ensure the system is functioning properly. The electronic system must be operated with a manual system for a limited time to ensure the electronic system is operating properly if the system has not been previously certified by the Permittees. If a generator/storage site does not have an existing manual data review, validation, and verification system that has been approved via audit, they may use an electronic system that has been previously certified at another generator/storage site in lieu of operating both manual and electronic systems. The generator/storage site must develop SOPs for operations related to use of the electronic system or have documented training in the use of the system. The generator/storage sites will

[1]ASME. 1989 (with 1990 addenda). Quality Assurance Requirements of Computer Software for Nuclear Applications (NQA-2). ASME-NQA-1, Subpart 2.7, American Society of Mechanical Engineers.

propose audit checklist items specific to the generator/storage site's electronic system. Prior to certification of the electronic system for use, CBFO will conduct an audit in accordance with Permit Attachment B Section B-5 and including the audit checklist items proposed by the generator/ storage site and approved by the NMED. The audit process will include approval of the final audit report by NMED.

One of the advantages of use of an electronic data evaluation system is that it will expedite the data review, validation, and verification process. This will allow earlier recognition of potential problems. Use of an electronic data evaluation system will also minimize inconsistencies in data evaluation and minimize human error in the data evaluation process. There are several significant advantages to both the Permittees and the New Mexico Environment Department (NMED) associated with electronic data evaluation. First, both the Permittees and the NMED benefit from the high degree of reliability associated with automated data review, validation, and verification. Second, large volumes of data are significantly easier to manage, and the data is more easily accessible to support the review and approval of audit reports. Third, data transfer from the generator/storage site to the Permittees is faster in the event a discrepancy is identified that requires reconciliation.

The general concept of electronic data management is supported by the U.S. Environmental Protection Agency's (EPA) Electronic Reporting Initiative. An overview of the Electronic Reporting Initiative is included as Attachment G. The long-term goal of EPA's Electronic Reporting Initiative is to use electronic reporting as a tool for streamlining and automating the exchanges of data among industry, environmental agencies and the public. Automation of data review, validation, and verification is consistent with EPA's automation and streamlining goals. In addition, EPA and the NMED have approved the White Sands Test Facility's Internet-based environmental information and management system that utilizes electronic reporting. The concept of electronic data review, validation, and verification is supported by EPA's Contract Laboratory Program, which utilizes software data management tools to conduct data verification and evaluate data against quality control criteria.

Revise reviewer responsibilities: This PMR proposes that one of the responsibilities currently assigned to the Site Project QA Officer be reassigned to the Independent Technical Reviewer, while the Site Project QA Officer will retain oversight to ensure the responsibility was completed. The PMR proposes that the Independent Technical Reviewer ensure that proper procedures were followed to ensure representative samples of headspace gas and homogeneous solids and soil/gravel were taken. This change will retain oversight for this function at the Site Project Level, while assigning the technical responsibility to the Data Generation Level. The proposed training and qualification requirements for Independent Technical Reviewers will ensure that the Independent Technical Reviewer is familiar enough with the procedures to make this determination.

In addition, this PMR proposes to revise the SPM review responsibilities for individual Batch Data Reports. This proposed change requires that the SPM review Batch Data Reports to ensure that all other reviews have been conducted and documented on the appropriate review forms. This is a change because the SPM is currently required to review the Batch Data Reports for information that has already been reviewed previously three times (e.g., reviewing significant figures). This change is consistent with the SPM's programmatic responsibility to ensure that all the work is done correctly and does not prohibit additional review by the SPM as

necessary.

Eliminate the Waste Stream Characterization Package: This PMR proposes to eliminate the Waste Stream Characterization Package because the information required for the Waste Stream Characterization Package is already found in the Waste Stream Profile Form and the Characterization Information Summary. The only additional component of the Waste Stream Characterization Package is the Batch Data Report. The WIPP HWFP currently requires the sites to submit the Waste Stream Characterization Package only upon request of the Permittees. Elimination of the Waste Stream Characterization Package will not preclude the Permittees from requesting additional information (e.g., Batch Data Reports) from generator sites. Removal of the Waste Stream Characterization Package from the WIPP HWFP does not reduce reporting requirements.

Eliminate quarterly repeat of data review: This PMR proposes to eliminate the quarterly repeat of data review, validation, and verification activities for one waste container because according to the WIPP HWFP, the function of the quarterly data review is to ensure that Data Generation Level review, validation, and verification are performed according to procedures, and the Permittees' Audit and Surveillance Program will ensure that data review, validation, and verification are performed according to procedures. Consequently, the quarterly repeat of data review, validation, and verification may be deleted.

Data management consolidation: Data management is addressed in numerous sections in the WIPP HWFP. This PMR consolidates the requirements to eliminate the possibility of inconsistencies between various sections. This includes deletion of some items in Table B6-1 because the corresponding requirements have previously been deleted from the WIPP HWFP.

Reorganize data management portions of WIPP HWFP: The WIPP HWFP contains data management requirements in both Attachment B and Attachment B3. In numerous cases, similar requirements are found in both the WIPP HWFP attachments. This PMR proposes reorganization of the WIPP HWFP Attachments B and B3 in order to consolidate requirements and make the document easier for the reader to understand and utilize. General requirements such as Data Quality Objectives, Permittees' Audit and Surveillance Program, and Records Management have been moved to the WIPP HWFP Attachment B. Specific data management requirements have been moved to the WIPP HWFP Attachment B3. In addition, the data management responsibilities have been divided into Data Generation, Site Project, and Permittee Levels in the WIPP HWFP Attachment B3. Phase I Waste Stream Screening and verification of TRU mixed waste and Phase II waste shipment screening and verification have been moved to Attachment B3 and retitled Waste Stream Profile Form and Characterization Information Summary Approval and Review of Shipping Records, respectively. Where requirements duplicated specific WIPP HWFP Conditions or information in other WIPP HWFP attachments, the duplicative requirements have been removed and references to the original requirements have been added. Attachment A, Table of Changes, cross-references the old organization to the new organization.

Barcodes: This PMR proposes the option to use barcodes in lieu of sample tags or labels, as long as the information normally found on a sample tag or label is available electronically. This will provide the generator/storage sites added flexibility in their sampling and analysis activities, while maintaining configuration control over samples.

Electronic records: This PMR proposes that records required by the WIPP HWFP may be either electronic or hard copy. Electronic records must be made available in hard copy format upon request of the Permittees. Audit reports may be submitted to NMED in electronic or hard copy format. This change will minimize the amount of paper records created by the generator/storage sites, while maintaining the same information electronically. This change is consistent with EPA's Electronic Reporting Initiative[2]. In addition, electronic records must be retrievable using software and hardware available at the generator/storage site.

Redundant Text: The WAP contains text that is repeated in several places. This PMR consolidates such text into a single location by using references. The Permittees consider such consolidation to be sound editorial practice because it minimizes opportunities to create inconsistencies between the same text in multiple locations.

Miscellaneous Changes: Because the Permittees will be revising several Permit Attachments in total (i.e., Permit Attachments B and B3), other changes are included such as updating of References, correction of typographical and spelling errors, correction of acronym definition and usage, and other similar items.

More specific explanations for individual changes are found in Attachment A, Table of Changes.

4. 20.4.1.900 NMAC (incorporating 40 CFR Subpart D) requires the applicant to provide the applicable information required by 40 CFR §§270.13 through 270.21, 270.62 and 270.63.

The regulatory crosswalk describes those portions of the WIPP HWFP that are affected by this proposed modification. Where applicable, regulatory citations in this modification reference Title 20, Chapter 4, Part 1, NMAC, revised June 14, 2000, incorporating the CFR, Title 40 (40 CFR Part 264 and 270).

5. 20.4.1.900 NMAC (incorporating 40 CFR §270.11(d)(1) and 40 CFR §270.30(k)) requires any person signing under paragraph a and b must certify the document in accordance with 20.4.1.900 NMAC.

The transmittal letter for this PMR contains the signed certification statement in accordance with Module I.F of the WIPP HWFP.

[2]U.S. Environmental Protection Agency, Electronic Reporting At EPA: Policy on Electronic Reporting, FRL-3815-4, FR 90-17692, Filed 7-27-90.

Regulatory Crosswalk

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the WIPP HWFP or Permit Application	Yes	No
§270.13		Contents of Part A permit application	Attachment O, Part A		✓
§270.14(b)(1)		General facility description	Attachment A		✓
§270.14(b)(2)	§264.13(a)	Chemical and physical analyses	Attachment B	✓	
§270.14(b)(3)	§264.13(b)	Development and implementation of waste analysis plan	Attachment B	✓	
	§264.13(c)	Off-site waste analysis requirements	Attachment B	✓	
§270.14(b)(4)	§264.14(a-c)	Security procedures and equipment	Attachment C		✓
§270.14(b)(5)	§264.15(a-d)	General inspection requirements	Attachment D		✓
	§264.174	Container inspections	Attachment D		✓
§270.23(a)(2)	§264.602	Miscellaneous units inspections	Attachment D		✓
§270.14(b)(6)		Request for waiver from preparedness and prevention requirements of Part 264 Subpart C	NA		
§270.14(b)(7)	264 Subpart D	Contingency plan requirements	Attachment F		✓
	§264.51	Contingency plan design and implementation	Attachment F		✓
	§264.52 (a) & (c-f)	Contingency plan content	Attachment F		✓
	§264.53	Contingency plan copies	Attachment F		✓
	§264.54	Contingency plan amendment	Attachment F		✓
	§264.55	Emergency coordinator	Attachment F		✓
	§264.56	Emergency procedures	Attachment F		✓
§270.14(b)(8)		Description of procedures, structures or equipment for:	Attachment E		✓
§270.14(b)(8)(i)		Prevention of hazards in unloading operations (e.g., ramps and special forklifts)	Attachment E		✓
§270.14(b)(8)(ii)		Runoff or flood prevention (e.g., berms, trenches, and dikes)	Attachment E		✓
§270.14(b)(8)(iii)		Prevention of contamination of water supplies	Attachment E		✓
§270.14(b)(8)(iv)		Mitigation of effects of equipment failure and power outages	Attachment E		✓
§270.14(b)(8)(v)		Prevention of undue exposure of personnel (e.g., personal protective equipment)	Attachment E		✓
§270.14(b)(8)(vi) and §270.23(a)(2)	§264.601	Prevention of releases to the atmosphere	Module II Module IV Attachment M2 Attachment N		✓
	264 Subpart C	Preparedness and Prevention	Attachment E		✓
	§264.31	Design and operation of facility	Attachment E		✓
	§264.32	Required equipment	Attachment E Attachment F		✓
	§264.33	Testing and maintenance of equipment	Attachment D		✓
	§264.34	Access to communication/alarm system	Attachment E		✓

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the WIPP HWFP or Permit Application	Yes	No
	§264.35	Required aisle space	Attachment E		✓
	§264.37	Arrangements with local authorities	Attachment F		✓
§270.14(b)(9)	§264.17(a-c)	Prevention of accidental ignition or reaction of ignitable, reactive, or incompatible wastes	Attachment E		✓
§270.14(b)(10)		Traffic pattern, volume, and controls, for example: Identification of turn lanes Identification of traffic/stacking lanes, if appropriate Description of access road surface Description of access road load-bearing capacity Identification of traffic controls	Attachment G		✓
§270.14(b)(11)(i) and (ii)	§264.18(a)	Seismic standard applicability and requirements	Part B, Rev. 6 Chapter B		✓
§270.14(b)(11)(iii-v)	§264.18(b)	100-year floodplain standard	Part B, Rev. 6 Chapter B		✓
	§264.18(c)	Other location standards	Part B, Rev. 6 Chapter B		✓
§270.14(b)(12)	§264.16(a-e)	Personnel training program	Attachment H		✓
§270.14(b)(13)	264 Subpart G	Closure and post-closure plans	Attachment I & J		✓
§270.14(b)(13)	§264.111	Closure performance standard	Attachment I		✓
§270.14(b)(13)	§264.112(a)-(b)	Written content of closure plan	Attachment I		✓
§270.14(b)(13)	§264.112(c)	Amendment of closure plan	Attachment I		✓
§270.14(b)(13)	§264.112(d)	Notification of partial and final closure	Attachment I		✓
§270.14(b)(13)	§264.112(e)	Removal of wastes and decontamination/dismantling of equipment	Attachment I		✓
§270.14(b)(13)	§264.113	Time allowed for closure	Attachment I		✓
§270.14(b)(13)	§264.114	Disposal/decontamination	Attachment I		✓
§270.14(b)(13)	§264.115	Certification of closure	Attachment I		✓
§270.14(b)(13)	§264.116	Survey plat	Attachment I		✓
§270.14(b)(13)	§264.117	Post-closure care and use of property	Attachment J		✓
§270.14(b)(13)	§264.118	Post-closure plan; amendment of plan	Attachment J		✓
§270.14(b)(13)	§264.178	Closure/containers	Attachment I		✓
§270.14(b)(13)	§264.601	Environmental performance standards-Miscellaneous units	Attachment I		✓
§270.14(b)(13)	§264.603	Post-closure care	Attachment I		✓
§270.14(b)(14)	§264.119	Post-closure notices	Attachment J		✓
§270.14(b)(15)	§264.142	Closure cost estimate	NA		✓
	§264.143	Financial assurance	NA		✓
§270.14(b)(16)	§264.144	Post-closure cost estimate	NA		✓
	§264.145	Post-closure care financial assurance	NA		✓
§270.14(b)(17)	§264.147	Liability insurance	NA		✓
§270.14(b)(18)	§264.149-150	Proof of financial coverage	NA		✓

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the WIPP HWFP or Permit Application	Yes	No
§270.14(b) (19)(i), (vi), (vii), and (x)		Topographic map requirements Map scale and date Map orientation Legal boundaries Buildings Treatment, storage, and disposal operations Run-on/run-off control systems Fire control facilities	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(ii)	§264.18(b)	100-year floodplain	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(iii)		Surface waters	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(iv)		Surrounding Land use	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b) (19)(v)		Wind rose	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(viii)	§264.14(b)	Access controls	Attachment O Part A Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(ix)		Injection and withdrawal wells	Attachment O Part A Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(xi)		Drainage on flood control barriers	Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(xii)		Location of operational units	Part B, Rev. 6 Chapter B		✓
§270.14(b)(20)		Other federal laws Wild and Scenic Rivers Act National Historic Preservation Act Endangered Species Act Coastal Zone Management Act Fish and Wildlife Coordination Act Executive Orders	Part B, Rev. 6 Chapter K		✓
§270.15	§264 Subpart I	Containers	Attachment M1		✓
	§264.171	Condition of containers	Attachment M1		✓
	§264.172	Compatibility of waste with containers	Attachment M1		✓
	§264.173	Management of containers	Attachment M1		✓
	§264.174	Inspections	Attachment D Attachment M1		✓
§270.15(a)	§264.175	Containment systems	Attachment M1		✓
§270.15(c)	§264.176	Special requirements for ignitable or reactive waste	Attachment E Permit Module II		✓
§270.15(d)	§264.177	Special requirements for incompatible wastes	Attachment E Permit Module II		✓
	§264.178	Closure	Attachment I		✓

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the WIPP HWFP or Permit Application	Yes	No
§270.15(e)	§264.179	Air emission standards	Attachment E Attachment N		✓
§270.23	264 Subpart X	Miscellaneous units	Attachment M2		✓
§270.23(a)	§264.601	Detailed unit description	Attachment M2		✓
§270.23(b)	§264.601	Hydrologic, geologic, and meteorologic assessments	Permit Module IV Attachment M2		✓
§270.23(c)	§264.601	Potential exposure pathways	Permit Module IV Attachment M2 Attachment N		✓
§270.23(d)		Demonstration of treatment effectiveness	Permit Module IV Attachment M2 Attachment N		✓
	§264.602	Monitoring, analysis, inspection, response, reporting, and corrective action	Permit Module IV Attachment M2 Attachment N		✓
	§264.603	Post-closure care	Attachment J Attachment J1		✓
	264 Subpart E	Manifest system, record keeping, and reporting	Permit Module I Permit Module II Permit Module IV Attachment B	✓	

Attachment A: Table of Changes

Reference	Explanation for Change	Proposed Change
Permit Condition II.C.1.g	The WIPP Waste Information System (WWIS) requirements have been moved to Permit Attachment B Section B-6b. WIPP is already accepting transuranic (TRU) mixed waste, and reference to meeting requirements prior to accepting waste has been deleted.	Changed "The WWIS shall meet all requirements presented in Section B-4b(1)(i) of the WAP, Permit Attachment B, prior to acceptance of TRU mixed waste." to "The WWIS shall meet all requirements presented in Section B-6b of the WAP, Permit Attachment B."
Permit Condition II.C.2.a	Discussion regarding Permittees Audit and Surveillance Program has been moved to Permit Attachment B Section B-5.	Permit Condition modified to refer to Section B-5 rather than Section B-4b(1)(iii).
Permit Attachment B	Editorial	Throughout Permit Attachment B, references to other sections have been updated to reflect the proposed changes.
Permit Attachment B	Editorial	Throughout Permit Attachment B, ensured that acronyms are defined at first use and used thereafter.
Permit Attachment B	Editorial. While these terms are synonymous, they were used interchangeably throughout Permit Attachment B. They have been revised for consistency.	Throughout Attachment B, "homogenous" has been replaced with "homogeneous".
Permit Attachment B	Editorial. While these terms are synonymous, they were used interchangeably throughout Permit Attachment B. They have been revised for consistency.	Throughout Attachment B, "heterogenous" has been replaced with "heterogeneous".
Permit Attachment B, Table of Contents	Editorial	Updated to reflect proposed reorganization of the Waste Analysis Plan (WAP).
Permit Attachment B, List of Figures	Figure B-1 is being moved to Permit Attachment B3 because the text that references this figure is being moved to Permit Attachment B3. Figure B-2 and Figure B-3 are proposed for deletion because reference to them was previously removed from the WAP. Figure B-5 is proposed for deletion because it does not reflect the required activities at the same level of detail as the text and may be misleading.	Updated to reflect removal of Figures B-1, B-2, B-3, and B-5 from Permit Attachment B.

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Introduction	Editorial correction of acronym.	Changed “TDSF” to “TSDF”.
Permit Attachment B, Introduction	The inserted paragraph was moved from Permit Attachment B Section B-1b. In addition, the inserted paragraph was revised to indicate that the Permittees will ensure that the waste is characterized in accordance with the WAP, not that the Permittees will perform the characterization activities. Acronym for U.S. Environmental Protection Agency was changed for consistency with the remainder of the document.	Inserted paragraph regarding proper characterization of all waste streams. “USEPA” was also changed to “EPA”. The sentences regarding shipment of wastes with codes listed on WIPP’s Part A Permit Application and unique state codes were not included because these concepts are reflected in the preceding paragraph.
Permit Attachment B, Introduction	The deleted paragraph was moved to Permit Attachment B Section B-3d, which addresses retrievably stored and newly generated waste. The following sentences were deleted as they are captured conceptually by the remainder of Permit Attachment B Section B-3d and its subsections: “TRU mixed waste will be retrieved from storage areas at a DOE generator/storage site” and “Retrievably stored TRU mixed waste will be characterized on an ongoing basis, as the waste is retrieved. Newly generated TRU mixed waste shall be characterized as it is generated.”	Deleted paragraph regarding retrievably stored and newly generated waste.
Permit Attachment B, Introduction	The definition of a waste stream was moved to B-1a. Remaining information in the deleted paragraph duplicates information in Permit Attachment B Sections B-1a and B-1b.	Deleted paragraph regarding characterization requirements, waste streams, and waste matrix code groups.
Permit Attachment B, Introduction	The deleted paragraphs have been moved to Permit Attachment B Section B-1b.	Deleted paragraphs regarding definition of summary category groups.
Permit Attachment B, Introduction	The deleted information has been moved to Permit Attachment B Section B-2.	Deleted paragraphs regarding common hazardous constituents in TRU mixed waste.

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Introduction	The deleted information is presented in detail in other sections of Permit Attachment B and Permit Attachment B3.	Deleted paragraphs regarding waste characterization activities, audits, and reporting.
Permit Attachment B, Section B-1a	Moved from Introduction	Added definition of waste stream.
Permit Attachment B, Section B-1b	Information moved from Introduction.	Added information regarding waste matrix code groups and Summary Category Groups.
Permit Attachment B, Section B-1b	Deleted paragraph was moved to Introduction. Some text was deleted as it duplicated information in the Introduction.	Deleted paragraph stating that generators can only ship waste listed on WIPP's Part A.
Permit Attachment B, Section B-1c	The deleted information has been moved to Permit Attachment B3 Sections B3-10c (generator/storage site responsibilities) and B3-12c (Permittee responsibilities).	Deleted information regarding review of radiography tapes.
Permit Attachment B, Section B-1c	The deleted information is addressed in Permit Attachment M1.	Deleted paragraph regarding venting of containers.
Permit Attachment B, Section B-1c	The deleted information is addressed in Permit Condition II.G.	Deleted paragraph regarding incompatible materials.
Permit Attachment B, Section B-1c	The deleted paragraph is addressed in Permit condition IV.d and in Permit Attachment B Section B-3a(1).	Deleted paragraph regarding headspace gas Volatile Organic Compound (VOC) concentration requirements.
Permit Attachment B, Section B-1d	Permit Attachment B3 Section B3-12b thoroughly addresses Permittee responsibilities for control of waste acceptance. It is unnecessary and potentially confusing to repeat portions of the requirements here. Permit Attachment B3 Section B3-11e addresses redefining waste to a separate waste stream and submittal of a new Waste Stream Profile Form. This permit modification request proposes elimination of the Waste Stream Characterization Package, and consequently the reference to the Package in this section has been deleted and it is not found elsewhere.	Added statement "Permit Attachment B3 Section B3-12b addresses Permittee responsibilities for control of waste acceptance." Deleted remaining text in this section.

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Section B-2	Moved from Introduction and Attachment Highlights.	Added paragraphs regarding most common hazardous constituents in TRU mixed waste to be managed at WIPP.
Permit Attachment B, Section B-2	Reference to “listed solvents” is inappropriate because if the solvents are not a waste, they cannot have waste codes assigned. The specific list of codes is unnecessary because this information is specified in Permit Attachment O.	Deleted specific listed waste codes and removed reference to solvents.
Permit Attachment B, Section B-3	VE is used as a confirmation technique.	Changed “The characterization techniques used by generator/storage sites includes acceptable knowledge, which incorporates confirmation by headspace-gas sampling and analysis, radiography, and homogeneous waste sampling and analysis. “ to “The characterization techniques used by generator/storage sites includes AK, which incorporates confirmation by headspace-gas sampling and analysis, VE, radiography, and homogeneous waste sampling and analysis.“
Permit Attachment B, Section B-3	Editorial. The remainder of the affected paragraph refers to characterization, so this sentence was revised to refer to characterization activities.	Changed “All confirmation characterization activities are performed in accordance with the WAP” to “All characterization activities are performed in accordance with the WAP.”
Permit Attachment B, Section B-3	Data review, validation, and verification are detailed quality assurance items best addressed in Permit Attachment B3.	Changed “Refer to Permit Attachment B3 for additional clarification regarding the expected contents of Batch Data Reports.” To “Permit Attachment B3 describes the expected contents of Batch Data Reports and required data review, validation, verification, and reporting requirements.“
Permit Attachment B, Section B-3a(1)	Reference to Table B-2 was deleted from Permit Attachment B Section B-1c, and it was appropriate to insert a reference to the table in this section regarding Headspace Gas Sampling and Analysis.	Added statement “Table B-2 presents the maximum allowable VOC room-averaged headspace concentration limits.”

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Section B-3a(1)	All information regarding Tentatively Identified Compounds (TIC) has been consolidated in Permit Attachment B Section B-3a(3). [Note that Permit Attachment B Section B-3a(3) no longer addresses Laboratory Qualification.]	Deleted information regarding TICs.
Permit Attachment B, Section B-3a(1)(a) and Section B-3a(1)(b)	Changed numbering to be consistent with remainder of document.	Changed numbering. Permit Attachment B Section B-3a(1)(i) is now Permit Attachment B Section B-3a(1)(a). Permit Attachment B Section B-3a(1)(ii) is now Permit Attachment B Section B-3a(1)(b).
Permit Attachment B, Section B-3a(1)(a)	Editorial. [Note that section number was formerly B-3a(1)(i)]	Changed “Grave” to “Gravel” in section title.
Permit Attachment B, Section B-3a(2), ¶1	Through the permit modification process, page numbers may unintentionally change. Reference to a section number is consistent with other sections of the Permit.	Changed reference from “page B-3" to “Section B-1b”.
Permit Attachment B, Section B-3a(3) (new section)	TIC information has been consolidated from multiple locations in Permit Attachment B and Permit Attachment B3. Information has been moved from Permit Attachment B Sections B-3a(1) and B-3d, and Permit Attachment B3 Section B3-1.	This new section, Tentatively Identified Compounds, has been added. Two subsections have been added: B-3a(3)(a), Reporting of Tentatively Identified Compounds; and B-3a(3)(b), Addition of Tentatively Identified Compounds to the Target Analyte List.
Permit Attachment B, Section B-3a(3) (old section)	Laboratory Qualification is a quality assurance-related item, and is more appropriate in Permit Attachment B3. The deleted information has been moved to new Permit Attachment B3 Section B3-1c.	This section is proposed for deletion.
Permit Attachment B, Section B-3b	Old Permit Attachment B Section B-4b(1) addressed Permittee responsibilities for waste stream screening and verification, which does not include sampling and analysis. Permittee responsibilities are addressed in Section B3-12 and its subsections.	Changed “In addition, Section B-4b(1) of this permit attachment describes the verification of acceptable knowledge through sampling and analysis and the Permittees' Audit and Surveillance Program.” to “In addition, Section B3-12 describes Permittee responsibilities for the verification of AK and the Permittees' Audit and Surveillance Program.”

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Section B-3c	Editorial. Specifies that the physical form of the waste, rather than the container, is verified.	Changed “Radiography and/or visual examination will be used to examine every waste container to verify its physical form.” to “Radiography and/or VE will be used to examine every waste container to verify the physical form of the waste.”
Permit Attachment B, Section B-3c	Editorial. The changed paragraph covers both radiography and VE, and the reference to Permit Attachment B1 should address both.	Changed “Radiographic examination protocols and QA/QC methods are provided in Permit Attachment B1.” to “Radiography and VE protocols and QA/QC methods are provided in Permit Attachment B1.”
Permit Attachment B, Section B-3d	The added information was moved from Introduction and Attachment Highlights. The added paragraph was also reorganized.	Added paragraph defining newly generated and retrievably stored waste.
Permit Attachment B, Section B-3d	Acceptable knowledge is addressed in Permit Attachment B Section B-3b, which also references detailed AK information found in Permit Attachment B4.	Deleted information regarding acceptable knowledge.
Permit Attachment B, Section B-3d	The deleted requirements are addressed in detail for newly generated and retrievably stored waste in later subsections.	Deleted paragraph regarding the use of chemical analyses to characterize waste.
Permit Attachment B, Section B-3d(1)(a)	The proposed change is consistent with current DOE nomenclature.	Changed “Carlsbad Area Office (CAO)” to “Carlsbad Field Office (CBFO)”.
Permit Attachment B, Section B-3d(1)(a)	The deleted statement is unnecessary as the following sentence addresses the same topic.	Deleted statement “The toxicity characteristics of newly generated homogeneous solids and soils/gravel waste streams will be determined using total analysis of toxicity characteristic contaminants or TCLP.”

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Section B-3d(1)(a)	Editorial.	Changed “To determine if a waste exhibits a toxicity characteristic for compounds specified in 20.4.1.200 NMAC (incorporating 40 CFR §261, Subpart C), TCLP may be used instead of total analyses.” to “To determine if a waste exhibits a toxicity characteristic for compounds specified in 20.4.1.200 NMAC (incorporating 40 CFR §261, Subpart C), either TCLP or total analyses may be used.”
Permit Attachment B, Section B-3d(2)	Editorial. Subject/verb agreement.	Changed “If radiographic analysis do not confirm the physical waste form, waste will be reassigned as specified in Section B-3c. “ to “If radiographic analysis does not confirm the physical waste form, waste will be reassigned as specified in Section B-3c. “.
Permit Attachment B, Section B-3d(2)	Editorial. The deleted phrase is redundant with the beginning of the sentence.	Changed “To confirm the results of radiography, a statistically selected number of the TRU mixed waste container population will be visually examined by opening containers to inspect waste contents to verify radiography results.” to “To confirm the results of radiography, a statistically selected number of the TRU mixed waste container population will be visually examined by opening containers to inspect waste contents.”
Permit Attachment B, Section B-3d(2)	The deleted statement is unnecessary as the following sentence addresses the same topic.	Deleted statement “The toxicity characteristic of retrievably stored homogeneous solids and soil/gravel wastes will be determined using total analysis of toxicity characteristic parameters or TCLP.”
Permit Attachment B, Section B-3d(2)	Editorial.	Changed “To determine if a waste exhibits a toxicity characteristic for compounds specified in 20.4.1.200 NMAC (incorporating 40 CFR §261, Subpart C), TCLP may be used instead of total analyses. “ to “To determine if a waste exhibits a toxicity characteristic for compounds specified in 20.4.1.200 NMAC (incorporating 40 CFR §261, Subpart C), either TCLP or total analyses may be used.”

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Section B-4	The information regarding data validation and verification has been moved to new Permit Attachment B Section B-3. The DQO information formerly found in Permit Attachment B Section B-4a(1) has been moved to this section. A general statement about DQOs has been moved from Permit Attachment B3 Section B3-11.	Renamed section "Data Quality Objectives." Added Data Quality Objective (DQO) information. Deleted paragraph regarding data validation and verification found in original Permit Attachment B Section B-4.
Permit Attachment B, Section B-4, "Homogeneous Waste Sampling and Analysis", Bullet 2	Previous regulatory reference was incorrect.	Changed regulatory reference to 20.4.1.200 New Mexico Administrative Code (NMAC).
Permit Attachment B, Section B-5 (new section)	Incorporates information from former Permit Attachment B Section B-4b(1)(iii), as well as information from former Permit Attachment B Section B-4a(4) regarding laboratory audits. Use of electronic copies of audit reports will minimize generation of paper copies. Former Permit Attachment B Section B-5, References, is now Permit Attachment B Section B-7.	Added new Section, "Permittee's Audit and Surveillance Program". Included statement that components of audit reports submitted to NMED or maintained in the WIPP facility operating record may be in electronic or hard copy format.
Permit Attachment B, Section B-6 (new section)	Consolidated records management requirements.	Added the following subsections: • B-6a, General Requirements • B-6b, WIPP Waste Information System (WWIS) • B-6c, Records Storage

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Section B-6a (new section)	General records management requirements were consolidated from former Permit Attachment B Section B-4b(2)(vi) and Permit Attachment B3 Section B3-10a. Corrections to electronic records were not previously addressed. The proposed change will clarify how generator/storage sites will handle corrections to electronic records. The option for electronic approvals will minimize generation of paper copies of records, as well as minimize time required to transfer paper copies from one individual to another. Inclusion of electronic records in the operating record will minimize generation of paper copies.	Added general records management requirements. Separated requirements for corrections to hard copy and electronic records. Added options for use of electronic approvals in lieu of signatures and releases via written or electronic signature or electronic approval. Added statement that the WIPP facility operating record may include both hard copy and electronic records.

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Section B-6b (new section)	WWIS information was consolidated from B-4b(1)(i) for general information, B-4a(6) for information about data formats and the *WIPP Waste Information System User's Manual for Use by Shippers/Generators*, and B3-12b(3) for information about the WWIS Data Dictionary and data transmission. The bullet regarding the "Reports of Change Log" was updated to reflect information required in the change log: • Changed by • Fields changed • Reason for the change • Change made These requirements are similar to the previous permit language, with the exception that before and after images of records are not required. Before and after images are useful for printed records. For electronic records, the above listed information are sufficient to provide an auditable trail for the data in the database. In addition, the Permittees access the data via the DOE Business Network or another secure connection rather than via the Internet. The data exchange protocols remain the same.	Added requirements for WWIS.
Permit Attachment B, Section B-6c (new section)	Records storage information was consolidated from B-4a(7) and B-4b(2)(vii). Original B-4b(2)(vii) had two bullets regarding discrepancy-related documentation; this has been consolidated to one bullet in the proposed change. Clarification that electronic records are included in the operating record will minimize generation of paper copies.	Added requirements for records storage. Added statement that the WIPP facility operating record may include both hard copy and electronic records.

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Section B-4a(2) (old section)	This section duplicated information found in Permit Attachment B3 Section B3-1. A new Permit Attachment B3 Section B3-1c has been added that comprehensively addresses Quality Assurance Objectives (QAO). Data Generation, Site Project, and Permittee level requirements related to QAOs formerly found in Permit Attachment B Section B-4a(2) are addressed in new Permit Attachment B3 Sections B3-10, B3-11, and B3-12.	This section, Quality Assurance Objectives, is proposed for deletion.
Permit Attachment B, Section B-4a(3) (old section)	Requirements for sample control have been moved to new Permit Attachment B3 Section B3-1d. The sentence regarding providing approved Quality Assurance Project Plan (QAPjP) to NMED has been deleted because this is addressed in Permit Attachment B5.	This section, Sample Control, is proposed for deletion.
Permit Attachment B, Section B-4a(4) (old section)	Data Generation Level requirements are addressed in Permit Attachment B3 Section B3-10. The Permittee's Audit and Surveillance Program is addressed in Permit Attachment B Section B-5. Laboratory requirements are addressed in Permit Attachment B3 Section B3-1c.	This section, Data Generation, is proposed for deletion.
Permit Attachment B, Section B-4a(5) (old section)	The deleted section did not actually discuss data verification, and duplicates information found elsewhere in the Permit. Data verification requirements are discussed in sections B3-1, B3-10, and B3-11.	This section, Data Verification, is proposed for deletion.
Permit Attachment B, Section B-4a(6) (old section)	Transmittal of Batch Data Reports is addressed in Permit Attachment B3 Section B3-10a. Information regarding the WWIS is found in Permit Attachment B Section B-6b. Transmittal of the Waste Stream Profile Form and Characterization Information Summary are addressed in Permit Attachment B3 Section B3-11f.	This section, Data Transmittal, is proposed for deletion.

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Section B-4a(7) (old section)	The deleted information regarding records storage has been moved to new Permit Attachment B Section B-6c.	This section, Records Management, is proposed for deletion.
Permit Attachment B, Section B-4b (old section)	The deleted introductory information regarding waste screening and verification has been moved to Permit Attachment B3 Section B3-12.	This section, Permittee Level: Waste Screening and Verification of TRU Mixed Waste, is proposed for deletion.
Permit Attachment B, Section B-4b(1) (old section)	The audit program is referenced in Permit Attachment B3 Section B3-12a and described in detail in Permit Attachment B Section B-5. QAPjP preparation and approval are described in Permit Attachment B5. Review of the Waste Stream Profile Form and Characterization Information Summary are addressed in Permit Attachment B3 Section B3-12b.	This section, Phase I Waste Stream Screening and Verification, is proposed for deletion.
Permit Attachment B, Section B-4b(1)(i) (old section)	The WWIS description has been moved to Permit Attachment B Section B-6b.	This section, WWIS description, is proposed for deletion.
Permit Attachment B, Section B-4b(1)(ii) (old section)	Requirements for Waste Stream Profile Form review and approval are found in Permit Attachment B3 Section B3-12b.	This section, Examination of the Waste Stream Profile Form and Container Data Checks, is proposed for deletion.
Permit Attachment B, Section B-4b(1)(iii) (old section)	The audit program is referenced in Permit Attachment B3 Section B3-12a and described in detail in Permit Attachment B Section B-5.	This section, Permittees' Audit and Surveillance Program, is proposed for deletion.
Permit Attachment B, Section B-4b(2) (old section)	Information regarding review of shipping records after the shipment has arrived is found in Permit Attachment B3 Section B3-12c.	This section, Phase II Waste Shipment Screening and Verification, is proposed for deletion.
Permit Attachment B, Section B-4b(2)(i) (old section)	Review of the EPA Uniform Hazardous Waste Manifest is addressed in Permit Attachment B3 Section B3-12c.	This section, Examination of the EPA Uniform Hazardous Waste Manifest and Associated Waste Tracking Information, is proposed for deletion.

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Section B-4b(2)(ii) (old section)	Review of the Land Disposal Restriction Notice is addressed in Permit Attachment B3 Section B3-12c.	This section, Examination of the Land Disposal Restriction Notice, is proposed for deletion.
Permit Attachment B, Section B-4b(2)(iii) (old section)	The verification activities addressed in the deleted section have been moved to Permit Attachment B3 Section B3-12c.	This section, Verification, is proposed for deletion.
Permit Attachment B, Section B-4b(2)(iv) (old section)	The concepts of the deleted section are addressed in the subsections of Permit Attachment B3 Section B3-12.	This section, Waste Shipment Screening QA/QC, is proposed for deletion.
Permit Attachment B, Section B-4b(2)(v) (old section)	General records management requirements are found in new Permit Attachment B Section B-6a.	This section, Records Management and Reporting, is proposed for deletion.
Permit Attachment B, Section B-4b(2)(vi) (old section)	General records management requirements are found in new Permit Attachment B Section B-6a.	This section, General Requirements, is proposed for deletion.
Permit Attachment B, Section B-4b(2)(vii) (old section)	Records storage requirements are found in new Permit Attachment B Section B-6c.	This section, Records Storage, is proposed for deletion.
Permit Attachment B, Section B-4b(2)(viii) (old section)	Permit Condition II.K.2 addresses the biennial report.	This section, Reporting, is proposed for deletion.
Permit Attachment B, Section B-7	Editorial. Numbering consistent with remainder of document.	Old Permit Attachment B Section B-5 has been renumbered B-7.
Permit Attachment B, Section B-7	The WAP reference to this document had previously been removed.	Deleted reference to EPA, 1980, “A Method for Determining the Compatibility of Hazardous Wastes”.

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Section B-7	References in correct order will be easier for the reader to find.	Reordered references in alphabetical and chronological order (note that reordered references are not indicated by redline/strikeout text. Only added or deleted references are indicated by redline/strikeout text.) Differentiated the two DOE, 1997 references by adding “a” and “b”.
Permit Attachment B, Tables	Editorial.	Throughout tables, inserted the word “Method” between “SW-846" and the specific method number.
Permit Attachment B, Table B-7	This PMR proposes elimination of the Waste Stream Characterization Package, which was optional.	Deleted Waste Stream Characterization Package as a Lifetime Record.
Permit Attachment B, Table B-7	The data reconciliation report is not referenced in Permit Attachment B or Attachment B3. The Data Validation Summary should be maintained as a Lifetime Record.	Deleted Data reconciliation report and added Data Validation Summary as a Lifetime Record.
Permit Attachment B, Table B-7	Clarifies that generator/storage sites may maintain hard copies or electronic copies of records, as long as hard copies are available upon request.	Added footnote: “Site Project Files include both hard copies and electronic records. Records that are available electronically need only be produced in hard copy format upon request of the Permittees.”
Permit Attachment B, Table B-8	This will allow the WIPP facility flexibility to change the actual field names while maintaining the required information in the WWIS.	Changed the title of the Table from “WIPP Waste Information System Data Fields” to “WIPP Waste Information System Required Information”.
Permit Attachment B, Table B-8	This provides WIPP more flexibility in storing data in portions of the database as is most efficient for programmers and data users. The same required information will continue to be maintained.	Removed references to individual data modules in the WWIS.
Permit Attachment B, Table B-8	More than one hazardous code may apply to a container.	Changed “Hazardous Code” to “Hazardous Code(s)”.
Permit Attachment B, Table B-8	Former footnotes “a” through “e” specifically referred to fields. As fields are being changed to information, these footnotes do not apply. Footnote “f” was renamed footnote “a” to eliminate the possibility for missing footnotes.	Deleted footnotes “a” through “e”, assigned former footnote “f” the letter “a”.

Reference	Explanation for Change	Proposed Change
Permit Attachment B, Figure B-1	Figure B-1 will be moved to Permit Attachment B3 because the reference to it has been moved to Permit Attachment B3.	Figure B-1 is proposed for deletion.
Permit Attachment B, Figure B-2	Figure B-2 is proposed for deletion because the text reference to the figure was previously removed from the WAP.	Figure B-2 is proposed for deletion.
Permit Attachment B, Figure B-3	Figure B-3 is proposed for deletion because the text reference to the figure was previously removed from the WAP.	Figure B-3 is proposed for deletion.
Permit Attachment B, Figure B-5	Figure B-5 is proposed for deletion because it does not reflect the required activities at the same level of detail as the text and may be misleading. Also note that the text referencing Figure B-5 was moved to Permit Attachment B3.	Figure B-5 is proposed for deletion.
Permit Attachment B1, Section B1-4, ¶3	Allows for the use of barcodes in lieu of sample tags or labels.	Changed “Sample tags or labels will be affixed to all samples and will identify at a minimum:” to “Sample tags, barcodes, or labels will be affixed to all samples. Sample tags and labels will identify at a minimum:”
Permit Attachment B1, Section B1-4, ¶3, bullet 6	Corrects typographical error.	“Data and time” changed to “Date and time”.
Permit Attachment B1, Section B1-4, ¶3	Allows for the use of barcodes in lieu of sample tags or labels.	Added the following statement at the end of the paragraph: “If barcodes are used, the information required for sample tags or labels must be electronically available for each barcode.”
Permit Attachment B3	Editorial	Throughout Permit Attachment B3, references to other sections have been updated to reflect the proposed changes.
Permit Attachment B3	Editorial	Throughout Permit Attachment B3, ensured that acronyms are defined at first use and used thereafter.

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Table of Contents	Editorial	Updated to reflect proposed reorganization of Permit Attachment B3.
Permit Attachment B3, List of Figures	Figure B3-1 is being deleted because the reference to it was previously removed from the WAP. New Figure B3-1 is former Figure B-1, which is being moved to Permit Attachment B3 because the reference to it has also been moved.	Updated to reflect deletion of current Figure B3-1, and addition of a new Figure B3-1.
Permit Attachment B3	Editorial. While the terms "homogenous" and "homogeneous" are synonymous, they were used interchangeably throughout Permit Attachment B3. They have been revised for consistency.	Throughout Attachment B3, "homogenous" has been replaced with "homogeneous".
Permit Attachment B3, Section B3-1	"Validation Methods" was not an appropriate title for this section, which contains general information related to waste analysis quality assurance/ quality control. In addition, Permit Attachment B3 Section B3-1 addresses numerous topics, and division into subsections will improve readability.	Title of this section has been changed from "Validation Methods" to "General Requirements". Subsections have been added as follows: • B3-1a: Data Review, Validation, and Verification • B3-1b: Quality Assurance Objectives • B3-1c: Laboratory Qualification • B3-1d: Sample Control
Permit Attachment B3, Section B3-1	The deleted information is summarized in new Permit Attachment B3 Section B3-1b, Quality Assurance Objectives.	The paragraph regarding general validation and quality assurance objective requirements has been deleted.
Permit Attachment B3, Section B3-1	The deleted paragraph has been moved to Permit Attachment B3 Section B3-4, which addresses radiography.	The paragraph regarding visual examination and radiography data has been deleted.
Permit Attachment B3, Section B3-1a (new section)	Added information moved from old Permit Attachment B3 Section B3-10. Data verification definition was modified to reflect the comprehensive nature of data verification. "Level" in electronic systems will be transparent to the user.	Added definitions of data review, data validation, and verification. Definition for data verification was modified to reflect that testing, as well as sampling and analysis activities, are addressed. Added statement that data review, validation, and verification activities may not be discernable into Data Generation Site Project levels for those sites using Electronic Data Evaluation Systems.

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-1b (new section)	New section contains QAO information originally found in Permit Attachment B3 Section B3-1. Data validation is defined in Permit Attachment B3 Section B3-1a. Specific validation requirements for the Data Generation, Site Project, and Permittee levels are described in Permit Attachment B3 Sections B3-10, B3-11, and B3-12.	New section addresses Quality Assurance Objectives. Reference to data validation has been removed.
Permit Attachment B3, Section B3-1b (new section), Method Detection Limits	It is not beneficial to include MDL determination method in the Permit when it is available in SW-846.	Deleted Method Detection Limit (MDL) definition for all analyses except FTIRS, and referred the reader to SW-846.
Permit Attachment B3, Section B3-1b (new section), Comparability, ¶2	Editorial (replace period with comma)	Changed “The criteria shall address. as appropriate, the following” to “The criteria shall address, as appropriate, the following”
Permit Attachment B3, Section B3-1b (new section), Nonconformance to Data Quality Objectives	Nonconformance information has been moved to Permit Attachment B3 Section B3-14.	This paragraph has been deleted.
Permit Attachment B3, Section B3-1b (new section), Identification of Tentatively Identified Compounds	Information regarding TICs has been consolidated in Permit Attachment B Section B-3a(3).	This paragraph has been deleted.
Permit Attachment B3, B3-1c (new section)	The new section consolidates information formerly found in Permit Attachment B Section B-3a(3) and B-4a(4). Note that the requirement for ensuring laboratory Performance Demonstration Program compliance during audits can be found in new Section B3-5, Permittee Audit and Surveillance Program.	This new section, Laboratory Qualification, has been added.

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, B3-1d (new section)	The new section contains information formerly found in Permit Attachment B Section B-4a(3). Barcodes will provide the generator/storage sites added flexibility in their sampling and analysis activities, while maintaining configuration control over samples.	This new section, Sample Control, has been added. Information regarding optional barcodes has also been added.
Permit Attachment B3, Section B3-3, Comparability	Editorial. Corrected spelling error.	Changed “useability” to “usability”
Permit Attachment B3, Section B3-4	The added paragraph was moved from Permit Attachment B3 Section B3-1.	The paragraph regarding visual examination and radiography data has been added.
Permit Attachment B3, Section B3-5	Comma was inserted because meeting calibration criteria is a separate requirement from meeting representativeness criteria.	Changed “...and meet the detection limit, calibration representativeness, and comparability criteria within this section.” to “...and meet the detection limit, calibration, representativeness, and comparability criteria within this section.
Permit Attachment B3, Section B3-9	Editorial. Nonconformance information has been consolidated in Permit Attachment B3 Section B3-14.	Changed “The Permittees shall require each generator/storage site to comply with the nonconformance notification and reporting requirements of Section B3-1 of this Permit Attachment if the results of confirmatory analytical techniques specified in Permit Attachment B are inconsistent with acceptable knowledge documentation.” to “The Permittees shall require each generator/storage site to comply with the nonconformance notification and reporting requirements of Section B3-14 of this Permit Attachment if the results of confirmatory analytical techniques specified in Permit Attachment B are inconsistent with AK documentation.”

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-10	Reorganization will result in clearer expectations at the Data Generation, Site Project, and Permittee levels.	Title of this section has been changed to “Data Generation Level Requirements”. Previous content of section has been deleted. See later changes. Introductory information has been added. Requirements regarding raw data collection and management from original Section B3-10a have been inserted here.
Permit Attachment B3, Section B3-10a (new section)	The new section contains information formerly found in B3-10 and B3-12a. Sites using an Electronic Data Evaluation System do not need to generate Batch Data Reports because the information found in the Batch Data Report is available in the electronic system and evaluations of the information is transparent to the data user. The generator/storage site must provide a copy of the Batch Data Report upon request. The primary purpose of page numbering is to ensure that pages are not missing from a hard copy. Page numbers are not necessary for electronic copies.	A new section, Batch Data Reports, has been added. The section also references Permit Attachment B Section B-6a and Section B-6c for general requirements for records management and records storage. This section also clarifies that Batch Data Reports are not required for generator/storage sites that are using an Electronic Data Evaluation System, but must be generated upon request of the Permittees. In addition, this section has been revised to indicate that page numbers need only be included on hard copy Batch Data Reports.
Permit Attachment B3, Section B3-10b (new section)	The new section contains information formerly found in Permit Attachment B3 Section B3-10a. Also includes statement regarding documentation for electronic data evaluation.	A new section, Data Evaluation Documentation, has been added.
Permit Attachment B3, Section B3-10c (new section)	This new section consolidates information formerly found in Permit Attachment B Section B-1c. Rephrasing training standard will clarify the requirement.	Added new section regarding review of radiography and visual examination tapes. Clarified that personnel who review radiography videotapes will be trained to the same standards (per the requirements of the Permit) as radiography operators.

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-10d (new section)	This new section contains information formerly found in Permit Attachment B3 Section B3-10a(1). The requirement regarding "significant difference discrepancies" was not in the permit application and this term is not defined elsewhere in Permit Attachment B3. From the context of the sentence, "significant figure discrepancies" is the appropriate language.	Added new section, Independent Technical Review. Also "significant difference discrepancies" has been changed to "significant figure discrepancies". The general paragraph at the beginning of the section was deleted because all of the information is found in the bullets. The purpose of the review was moved to the paragraph regarding independent technical review of one hundred percent of Batch Data Reports.
Permit Attachment B3, Section B3-10d (new section)	Clarifies that any generator/storage site-specific requirements not related to the WIPP HWFP are not addressed in the qualification requirement.	Changed "This review shall be performed by an individual (other than the data generator) who is qualified to have performed the initial work." to "This review shall be performed by an individual (other than the data generator) who is qualified to have performed the initial work per the requirements of this Permit."
Permit Attachment B3, Section B3-10d (new section)	If the generator/storage site utilizes an automated electronic data evaluation system, the Independent Technical Reviewer must ensure that the data are technically reasonable based on the technique used. This responsibility cannot be accomplished manually.	Added new optional responsibility for Independent Technical Reviewer, to ensure the data are technically reasonable based on the technique used.
Permit Attachment B3, Section B3-10d (new section)	This responsibility was formerly included in the introductory paragraph (which has been deleted.) It will be clearer to the reader to include this responsibility in the list of other responsibilities.	Added new bulleted responsibility for Independent Technical Reviewer, to ensure deviations are documented.
Permit Attachment B3, Section B3-10d (new section)	This responsibility is more appropriate for the Data Generation Level review. The Site Project QA Officer has more programmatic QA responsibilities. This requirement was formerly found in Section B3-10b(1).	Added new responsibility for Independent Technical Reviewer, to ensure proper procedures were followed to ensure representative samples of headspace gas and homogeneous solids and soil/gravel were taken.

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-10d (new section)	Clarifies that when using an electronic system, it is possible to discover nonconformances prior to Site Project Manager Review, and these should be addressed by the Independent Technical Reviewer prior to release of the data to the Site Project Manager.	Added the following statement: "If an electronic data evaluation system is used, the Independent Technical Reviewer must address all previously identified Nonconformance Reports prior to releasing the data."
Permit Attachment B3, Section B3-10e (new section)	This new section contains information formerly found in Permit Attachment B3 Section B3-10a(2). Whereas former Section B3-10a(2) stated that one hundred percent of the Batch Data Reports must receive technical supervisory signature release, this text has been changed to state that one hundred percent of the Batch Data Reports much receive technical supervisory review. This change is consistent with text found for other reviewers. The required release is discussed later in the paragraph.	Added new section, Technical Supervisor Review.
Permit Attachment B3, Section B3-10e (new section)	Clarifies that the technical supervisor review ensures that radiography tapes have received periodic technical review, but do not necessarily conduct the review themselves.	Changed "All data have received Independent Technical review with the exception of radiography tapes, which shall receive periodic technical review as specified in Section B1-3b(2)." to "All data have received Independent Technical review with the exception of radiography tapes. For radiography tapes, the Technical Supervisor review shall ensure that radiography tapes have received periodic technical review as specified in Section B1-3b(2)."
Permit Attachment B3, Section B3-10e (new section)	This PMR proposes adding an option for automated electronic data review, validation, and verification. In that case, in order to eliminate the Technical Supervisor review, the responsibility for ensuring that data are technically reasonable based on the technique used must be assigned to the Independent Technical Reviewer.	Added statement: "Manual review by the Technical Supervisor is not required if an automated electronic system is used. If an automated electronic system is used, the generator/storage site must assign the responsibility for ensuring that the data are technically reasonable based on the technique used to the Independent Technical Reviewer. See Section B3-13 for additional information regarding electronic data evaluation."

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-10f (new section)	This new section contains information formerly found in Permit Attachment B3 Section B3-10a(3).	Added new section, QA Officer Review. Portions of the general paragraph at the beginning of the section were deleted because the information is found in the bullets.
Permit Attachment B3, Section B3-10f (new section)	Changed text incorporates responsibility that was deleted when introductory paragraph was removed.	Changed “Sampling and analytical QC checks have been properly performed.” to “Sampling and analytical QC checks have been properly performed and meet acceptance criteria.”
Permit Attachment B3, Section B3-10f (new section)	This PMR proposes adding an option for automated electronic data review, validation, and verification. If the automated system is used, manual review and release by the QA Officer will not be required, with the exception of ensuring that representative samples were taken as required.	Added statement: “Manual review by the QA Officer is not required if an automated electronic system is used. See Section B3-13 for additional information regarding electronic data evaluation.”
Permit Attachment B3, Section B3-11 (new section)	This new section contains information formerly found in Permit Attachment B3 Section B3-10b.	Added new section, Site Project Level Requirements. Added introductory information.
Permit Attachment B3, Section B3-11a (new section)	This new section contains information formerly found in Permit Attachment B3 Section B3-10b(3).	Added new section, Data Evaluation Documentation.
Permit Attachment B3, Section B3-11b (new section)	This new section contains information formerly found in Permit Attachment B3 Section B3-10b(1).	Added new section, Site Project QA Officer Review. The general paragraph at the beginning of the section was deleted because all of the information is found in the bullets.
Permit Attachment B3, Section B3-11b (new section)	The changed responsibility as originally written was moved to Section B3-10d, Independent Technical Review. The Site Project QA Officer is now responsible for ensuring that the Independent Technical Reviewer completed his or her responsibilities.	Changed “Proper procedures were followed to ensure representative samples of headspace gas and homogeneous solids and soil/gravel were taken.” to “The ITR has verified that proper procedures were followed to ensure representative samples of headspace gas and homogeneous solids and soil/gravel were taken.”

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-11b (new section)	This PMR proposes adding an option for automated electronic data review, validation, and verification. If the automated system is used, manual review by the Site Project QA Officer will not be required, although he or she will ensure nonconformance reports are prepared and continue to release the data.	Added statement: "Manual review by the Site Project QA Officer is not required if an automated electronic system is used. If an automated electronic system is used, the Site Project QA Officer must review the Electronic Data Evaluation Report and ensure that any required nonconformance reports are prepared in accordance with Section B3-14. See Section B3-13 for additional information regarding electronic data evaluation."
Permit Attachment B3, Section B3-11c (new section)	This section contains information formerly found in Permit Attachment B3 Section B3-10b(2).	Added new section, Site Project Manager Review.
Permit Attachment B3, Section B3-11c (new section)	This PMR proposes adding an option for automated electronic data review, validation, and verification. If the automated system is used, manual review by the SPM will not be required, although he or she will review the Electronic Data Evaluation Report and continue to release the data.	Added statement: "Manual review by the Site Project Manager is not required if an automated electronic system is used. If an automated electronic system is used, the SPM must review the Electronic Data Evaluation Report. See Section B3-13 for additional information regarding electronic data evaluation."
Permit Attachment B3, Section B3-11d (new section)	This new section incorporates information formerly found in Permit Attachment B3 Section B3-10b(3).	Added new section, Sample Release.
Permit Attachment B3, Section B3-11e (new section)	This new section incorporates information formerly found in sections B3-11 and B-1d. Note that the requirement for the SPM to document that random "sampling" was performed has been modified to state "In addition, the SPM must document that containers were randomly selected in accordance with Permit Attachment B2." This change was made because "sampling" in the WAP refers to homogeneous solid sampling or headspace gas, and the statement as previously worded would not apply to VE.	Added new section, Data Reconciliation.

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-11f (new section)	This new section incorporates information formerly found in sections B-4a(6) and B3-12b(1).	Added new section, Waste Stream Profile Form.
Permit Attachment B3, Section B3-11g (new section)	This new section incorporates information formerly found in Permit Attachment B3 Section B3-12b(1).	Added new section, Characterization Information Summary
Permit Attachment B3, Section B3-11h (new section)	This new section incorporates information formerly found in Permit Attachment B3 Section B3-12b requiring the Site Project QA Officer to ensure that the Waste Stream Profile Form and the Characterization Information Summary are consistent with information found in analytical batch reports. The permit modification request also proposes that this activity may be conducted electronically.	Added new section, Report Consistency.
Permit Attachment B3, Section B3-11i (new section)	This new section references Permit Attachment B Section B-6b, which contains WWIS requirements for generator/storage sites.	Added new section, WWIS
Permit Attachment B3, Section B3-11j (new section)	This new section incorporates information formerly found in Permit Attachment B Section B-4b(2)(ii).	Added new section, Land Disposal Restriction Notice Information.
Permit Attachment B3, Section B3-11k (new section)	Added requirement for SPM to ensure that a Uniform Hazardous Waste Manifest accompanies waste shipments to WIPP.	Added new section, Uniform Hazardous Waste Manifest
Permit Attachment B3, Section B3-12 (new section)	This new section incorporates information formerly found in Permit Attachment B Section B-4b.	Added new section, Permittee Level Requirements
Permit Attachment B3, Section B3-12a (new section)	This new section incorporates information formerly found in Permit Attachment B3 Section B3-10c. This section refers to Permit Attachment B Section B-5, which contains the requirements for the Permittee Audit and Surveillance Program.	Added new section, Permittee Audit Program.

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-12b (new section)	This new section consolidates information formerly found in Permit Attachment B Sections B-4b(1) and B-4b(1)(ii), and Permit Attachment B3 Section B3-11b.	Added new section, Waste Stream Profile Form and Characterization Information Summary Approval.
Permit Attachment B3, Section B3-12c (new section)	This new section consolidates information formerly found in Permit Attachment B Sections B-1c, B-4b(2), B-4b(2)(i), B-4b(2)(ii), and B-4b(2)(iii). It includes the requirement for the Permittees to review 1 percent of radiography tapes.	Added new section, Review of Shipping Records
Permit Attachment B3, Section B3-13 (new section)	This new section contains requirements for electronic review, validation, and verification activities that may be conducted at the Data Generation and Site Project Levels. The electronic review, validation, and verification activities may be conducted in lieu of the manual responsibilities of the Technical Supervisor, QA Officer, Site Project QA Officer, and SPM. The new section includes requirements for a Design Document, Requirements Document, Implementation Document, Installation and Checkout Document, and Operations and Maintenance Document, whose purpose is to ensure that the electronic system is functioning properly prior to certification for use.	Added new section, Electronic Data Evaluation
Permit Attachment B3, Section B3-10 (old section)	A general description of data review, validation, and verification activities can be found in new Permit Attachment B3 Section B3-1a. Information regarding Batch Data Reports is found in new Permit Attachment B3 Section B3-10a.	This section, Data Review, Validation, and Verification Requirements, is proposed for deletion.

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-10a (old section)	General data collection and management activities are found in new Permit Attachment B Section B-6a and B3-10. A general statement regarding data review, validation, and verification activities at the Data Generation Level is found in new Permit Attachment B3 Section B3-10. Information regarding checklists is found in new Permit Attachment B3 Section B3-10b.	This section, Data Generation Level, is proposed for deletion.
Permit Attachment B3, Section B3-10a(1) (old section)	Independent Technical Review is addressed in new Permit Attachment B3 Section B3-10d.	This section, Independent Technical Review, is proposed for deletion.
Permit Attachment B3, Section B3-10a(2) (old section)	The Technical Supervisor review is described in new Section B3-10e.	This section, Technical Supervisor Review, is proposed for deletion.
Permit Attachment B3, Section B3-10a(3) (old section)	QA Officer Review is addressed in new Permit Attachment B3 Section B3-10f.	This section, QA Officer Review, is proposed for deletion.
Permit Attachment B3, Section B3-10b (old section)	A general statement regarding data validation, and verification activities at the Site Project Level is found in new Permit Attachment B3 Section B3-11. Nonconformances are addressed in B3-14. The paragraph regarding the quarterly repeat of data review, validation, and verification for one waste container has been deleted. According to the Permit, the function of the quarterly data review is to ensure that data review, validation, and verification are performed according to procedures. The Permittees' Audit and Surveillance Program will ensure that data review, validation, and verification are performed according to procedures, and consequently the quarterly review may be eliminated.	This section, Project Level, is proposed for deletion.

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-10b(1) (old section)	Site Project QA Officer Review is addressed in new Permit Attachment B3 Section B3-11b.	This section, Site Project QA Officer, is proposed for deletion.
Permit Attachment B3, Section B3-10b(2) (old section)	SPM Review is addressed in new Permit Attachment B3 Section B3-11c.	This section, Site Project Manager, is proposed for deletion.
Permit Attachment B3, Section B3-10b(3) (old section)	The paragraph regarding preparation of the Site Project QA Officer Summary and Data Validation Summary has been moved to new Permit Attachment B3 Section B3-11a, Data Evaluation Documentation. The paragraph regarding sample retention has been moved to new Permit Attachment B3 Section B3-11d, Sample Release.	This section, Prepare Site Project QA Officer Summary and Data Validation Summary, is proposed for deletion.
Permit Attachment B3, Section B3-10b(4) (old section)	The Waste Stream Characterization Package duplicates information in the Waste Stream Profile Form and the Characterization Information Summary. The Permit currently requires the sites to submit the Waste Stream Characterization Package only upon request of WIPP. Elimination of the Waste Stream Characterization Package will not preclude WIPP from requesting additional information from generator sites. Additional detailed information is available without specifying the Waste Stream Characterization Package, and consequently the Waste Stream Characterization Package is proposed for deletion from the Permit.	This section, Prepare Waste Stream Characterization Package, is proposed for deletion.
Permit Attachment B3, Section B3-10c (old section)	The paragraph regarding the Permittees' Audit and Surveillance Program has been moved to new Permit Attachment B3 Section B3-12a. Waste Stream Profile Form approval and WWIS internal limit checks are addressed in new Permit Attachment B3 Section B3-12b.	This section, Permittees' Level, is proposed for deletion.

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-11 (old section)	General information about Data Quality Objectives is found in new Permit Attachment B Section B-4.	This section, Reconciliation with Data Quality Objectives, is proposed for deletion.
Permit Attachment B3, Section B3-11a (old section)	The deleted information has been moved to new Permit Attachment B3 Section B3-11e, Data Reconciliation.	This section, Reconciliation at the Project Level, is proposed for deletion.
Permit Attachment B3, Section B3-11b (old section)	The deleted information has been moved to new Permit Attachment B3 Section B3-12b, Waste Stream Profile Form and Characterization Information Summary Approval.	This section, Reconciliation at the Permittee Level, is proposed for deletion.
Permit Attachment B3, Section B3-12 (old section)	This introductory paragraph is no longer necessary as the detailed supporting information has been relocated to other sections of the Permit.	This section, Data Reporting Requirements, is proposed for deletion.
Permit Attachment B3, Section B3-12a (old section)	Information regarding transmittal of Batch Data Reports has been moved to new Permit Attachment B3 Section B3-10a, Data Reports. Information regarding transmittal of checklists has been moved to new Permit Attachment B3 Section B3-10b, Data Evaluation Documentation. Information regarding maintenance of QA documentation has been moved to new Permit Attachment B3 Section B3-10a, Data Reports.	This section, Data Generation Level, is proposed for deletion.
Permit Attachment B3, Section B3-12b (old section)	The statement requiring the Site Project QA Officer to verify that the Waste Stream Profile Form and Characterization Information Summary are consistent with information found in analytical batch reports has been moved to new Permit Attachment B3 Section B3-11h. The remainder of the section is general and more detailed requirements are presented elsewhere in the Permit. Consequently, the general portions of this section have been deleted.	This section, Project Level, is proposed for deletion.

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-12b(1) (old section)	Information regarding the Waste Stream Profile Form has been moved to new Permit Attachment B3 Section B3-11f, Waste Stream Profile Form. Information regarding the Characterization Information Summary has been moved to new Permit Attachment B3 Section B3-11g, Characterization Information Summary. The paragraph requiring the generator/storage sites to maintain a cross reference of container identification numbers to each Batch Data Report has been deleted because new Permit Attachment B3 Section B3-11g, Characterization Information Summary, requires that the Characterization Information Summary include a cross-reference of container identification numbers to each Batch Data Report.	This section, Waste Stream Profile Form and Waste Characterization Information Summary, is proposed for deletion.
Permit Attachment B3, Section B3-12b(2) (old section)	The Waste Stream Characterization Package is proposed for deletion. See explanation for deletion of Permit Attachment B3 Section B3-10b(4).	This section, Waste Stream Characterization Package, is proposed for deletion.
Permit Attachment B3, Section B3-12b(3) (old section)	The information in the deleted section has been moved to new Permit Attachment B Section B-6b, WWIS.	This section, WIPP Waste Information System (WWIS) Data Reporting, is proposed for deletion.
Permit Attachment B3, Section B3-14 (new section number)	Renumbering required due to added sections.	Former Permit Attachment B3 Section B3-13, Nonconformances, has been renumbered as Permit Attachment B3 Section B3-14.
Permit Attachment B3, Section B3-14 (new section number)	Nonconformance requirements have been consolidated in Permit Attachment B3 Section B3-14, and are no longer found in Permit Attachment B3 Section B3-1.	Deleted the following statement: “The Permittees shall comply with the nonconformance requirements specified in Section B3-1 of this Permit Attachment.”
Permit Attachment B3, Section B3-14 (new section number)	Editorial. Corrected spelling and grammar errors.	Changed “useability” to “usability of”

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-14 (new section number)	Clarifies that the data will be reviewed by the Independent Technical Reviewer prior to Site Project Manager review, and consequently not all nonconformances will be discovered at the Site Project Manager level. Also clarifies that NCRs may also be generated electronically.	Added the statement: "In the case of electronic data evaluation systems, NCRs may be generated manually or electronically, and will be addressed by the Independent Technical Reviewer prior to release of the data."
Permit Attachment B3, Section B3-14 (new section number)	"Calendar" was inserted to reflect the text from original section B3-1.	Changed "The Permittees will receive written notification of all non-administrative nonconformances (i.e., a failure to meet a DQO) first identified during the Site Project Manager Review within five (5) days of identification. The Permittees will also receive a nonconformance report within thirty (30) days of identification. " to "The Permittees will receive written notification of all non-administrative nonconformances (i.e., a failure to meet a DQO) first identified during the Site Project Manager Review within five (5) calendar days of identification. The Permittees will also receive a nonconformance report within thirty (30) calendar days of identification. "
Permit Attachment B3, Section B3-14 (new section number)	The added text was moved from Permit Attachment B3 Section B3-1b, Nonconformance to Data Quality Objectives.	Added the following statement: "The Permittees shall send NMED a monthly summary of nonconformances identified during the previous month, indicating the number of nonconformances received and the generator/storage sites responsible."
Permit Attachment B3, Section B3-15 (new section number)	Renumbering required due to added sections.	Former Permit Attachment B3 Section B3-14, Special Training Requirements and Certifications, has been renumbered as Permit Attachment B3 Section B3-15.
Permit Attachment B3, Section B3-16 (new section number)	Renumbering required due to added sections.	Former Permit Attachment B3 Section B3-15, Changes to WAP Related Plans or Procedures, has been renumbered as Permit Attachment B3 Section B3-16.

Reference	Explanation for Change	Proposed Change
Permit Attachment B3, Section B3-17 (new section number)	Renumbering required due to added sections.	Former Permit Attachment B3 Section B3-16, List of References, has been renumbered as Permit Attachment B3 Section B3-17.
Permit Attachment B3, Section B3-17 (new section number)	Referenced in new Permit Attachment B3 Section B3-13, Electronic Data Evaluation.	Reference added for ASME-NQA-1, Quality Assurance Requirement of Computer Software for Nuclear Applications (NQA-2).
Permit Attachment B3, Section B3-17 (new section number)	Referenced in new Permit Attachment B3 Section B3-12b, Waste Stream Profile Form and Characterization Information Summary Approval.	Reference added for Part B Permit Application.
Permit Attachment B3, Section B3-17 (new section number)	Documents no longer referenced in Permit Attachment B3.	Deleted references for Currie, EG&G, Fisenne, Pasternack, and DOE (1997).
Permit Attachment B3, Section B3-17 (new section number)	These documents are referenced in Table B3-10.	Added references for Contract Laboratory Program: Statement of Work for Inorganics Analysis; Multi-media, Multi-concentration, ILM03.0 and Contract Laboratory Program: Statement of Work For Organics Analysis; Multi-media, Multi-concentration, OLM01.0.
Permit Attachment B3, Table B3-10	This footnote was added to provide requirements for the Independent Technical Reviewer to accommodate their new responsibility under the automated electronic system, ensuring that the data are technically reasonable based on the technique used.	Added statement to the end of footnote “c”, “Independent Technical Reviewers shall meet the training and qualification requirements for the related Operator.”
Permit Attachment B6, throughout (including tables)	Editorial.	For items included in this PMR, capitalized “Data Generation Level” and Site Project Level”.
Permit Attachment B6, Section B6-2, ¶1	Much audit supporting documentation is available electronically. The option to submit audit reports electronically will minimize generation of paper copies.	Added statement that audit reports may be in hard copy or electronic format.

Reference	Explanation for Change	Proposed Change
Permit Attachment B6, Section B6-3, ¶2, bullet 8	Consistent with Permit Attachment B Section B-6b, use of the term "release" will give WIPP the option to use hard copy signature, electronic signature, or electronic approval of audit reports.	Changed "Prepare and sign the audit report" to "Prepare and release the audit report".
Permit Attachment B6, Section B6-4, last ¶	Much audit supporting documentation is available electronically. The option to submit audit reports electronically will minimize generation of paper copies.	Added statement that audit reports may be in hardcopy or electronic format.
Permit Attachment B6, tables	Editorial.	Updated NMAC references for changed items.
Permit Attachment B6, Table B6-1, Throughout	Editorial.	Modified table to be consistent with other proposed changes in PMR, including update of references to Permit Attachment sections.
Permit Attachment B6, Table B6-1, Throughout	The text change will make the language in the Table B6-1 checklist consistent with the data review, validation, and verification levels (Data Generation, Site Project, and Permittee) defined in Permit Attachment B3.	"Non-programmatic technical review" replaced with "Independent Technical Review".
Permit Attachment B6, Table B6-1, Item 8	Text modified to be consistent with requirements in Permit Attachment B, Section B-2, NMAC reference updated.	Changed "Toxicity characteristic contaminants listed in 20 NMAC 4.1.200" to "Toxicity characteristic contaminants listed in 20.4.1.200 NMAC Table 1 (excluding pesticides) as specified in Permit Attachment O".
Permit Attachment B6, Table B6-1, Item 8	Text modified to be consistent with requirements in Permit Attachment B, Section B-2, NMAC reference updated.	Changed "F-listed and P-listed solvents or wastes (F001, F002, F003, F004, F005, F006, F007, F009, P015) found in 20 NMAC 4.1.200" to "Listed waste found in 20.4.1.200 NMAC as specified in Permit Attachment O".
Permit Attachment B6, Table B6-1, Item 8	Text modified to be consistent with requirements in Permit Attachment B, Section B-2, NMAC reference updated.	Changed "Hazardous constituents as included in 20 NMAC 4.1.200" to "Hazardous constituents as included in 20.4.1.200 NMAC Appendix VIII as specified in Tables B-1, B-3, and B-4, as well as any other hazardous constituent identified through acceptable knowledge".

Reference	Explanation for Change	Proposed Change
Permit Attachment B6, Table B6-1, Item 21	Text modified to be consistent with requirements in Permit Attachment B, Section B-3a(1).	Changed “Are procedures in place to ensure that each TRU waste container will be sampled and analyzed according to sampling protocols, equipment, and QA/QC methods as specified in Attachment B1?” to “Are procedures in place to ensure that each TRU waste container or statistically selected containers from waste streams that meet the conditions for reduced headspace gas sampling will be sampled and analyzed according to sampling protocols, equipment, and QA/QC methods as specified in Attachment B1?”
Permit Attachment B6, Table B6-1, Item 24	Text modified to be consistent with requirements in Permit Attachment B, Section B-3a(2).	Changed “Are procedures in place to ensure that total analyses or TCLP of PCBs, VOCs, SVOCs, and Metals are performed on all core samples to determine if the waste exhibits a toxicity characteristic?” to “Are procedures in place to ensure that Totals or Toxicity Characteristic Leaching Procedure analyses for VOCs, semivolatile organic compounds, and RCRA-regulated metals, as well as the results of PCB analyses, are used to determine waste parameters in soils/gravels and solids that may be important to performance of the disposal system and to determine if the waste exhibits a toxicity characteristic?”
Permit Attachment B6, Table B6-1, Item 26	Text modified to be consistent with requirements in Permit Attachment B, Section B-3c.	Change “Examine every waste container to determine the physical form” to “Examine every waste container to determine the physical form of the waste”.
Permit Attachment B6, Table B6-1, Item 26	Text modified to be consistent with requirements in Permit Attachment B, Section B-3c.	Change “Verify the physical form matches the waste stream description” to “Verify the physical form of the waste matches the waste stream description”.

Reference	Explanation for Change	Proposed Change
Permit Attachment B6, Table B6-1, Item 30	Text modified to be consistent with requirements in Permit Attachment B, Section B-4, NMAC reference updated.	Change "Perform totals analyses of homogenous solids and soils/gravel wastes to report the average concentration of hazardous constituents in a waste stream as a function upper confidence limits (UCL_{90}) of the mean concentrations, with all averages greater than the MDL considered a detection and subsequent assignment, as applicable, of a hazardous waste code, and as specified in 20 NMAC 4.1.200 to confirm hazardous waste characterization by Acceptable Knowledge" to "Perform totals analyses of homogenous solids and soils/gravel wastes to report the average concentration of hazardous constituents in a waste stream as a function upper confidence limits (UCL_{90}) of the mean concentrations, with all averages greater than the PRQL considered a detection and subsequent assignment, as applicable, of a hazardous waste code, and as specified in 20.4.1.200 NMAC to confirm hazardous waste characterization by Acceptable Knowledge".
Permit Attachment B6, Table B6-1, Item 32	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-10d.	Added bullet: "All data must receive a technical review by an Independent Technical Reviewer?
Permit Attachment B6, Table B6-1, Item 32	Text modified to be consistent with requirements in Permit Attachment B3, Sections B3-10e, B3-10f.	Changed "All data must receive a technical review by another qualified analysts or the technical supervisor, and the laboratory QA officer?" to "All data must receive a technical review by the technical supervisor and the QA officer or electronic data review?"
Permit Attachment B6, Table B6-1, Item 32	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-11b, B3-11c.	Changed "All raw data must be reviewed and have the release signatures of a technical supervisor and a QA officer before release?" to "All raw data must be reviewed and have the release of a Site Project QA Officer and Site Project Manager or electronic data review accompanied by release from Site Project Manager?"

Reference	Explanation for Change	Proposed Change
Permit Attachment B6, Table B6-1, Item 35	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-10a.	Changed “Are procedures in place to ensure that the generator/storage site prepares analytical, testing, and sampling Batch Data Reports to meet the requirements of their own site-specific QAPjP and/or SOPs?” to “Are procedures in place to ensure that the generator/storage site prepares analytical, testing, and sampling Batch Data Reports to meet the requirements of their own site-specific documentation?”
Permit Attachment B6, Table B6-1, Item 36	Text modified to be consistent with requirements in Permit Attachment B, Section B-6a.	Changed “All raw data shall be signed and dated in reproducible ink by the individual collecting the data, or signed and dated using electronic signatures” to “All raw data shall be signed and dated in reproducible ink by the individual collecting the data, or unalterable electronic approvals may be used.”
Permit Attachment B6, Table B6-1, Item 36	Text modified to be consistent with requirements in Permit Attachment B, Section B-6a.	Changed “All changes to original data shall be lined out, initialed, and dated by the individual making the change. Original data may not be obliterated or otherwise be made unreadable” to “All changes to manual records shall be lined out, initialed, and dated by the individual making the change. Original data may not be obliterated or otherwise be made unreadable.”
Permit Attachment B6, Table B6-1, Item 36	Text modified to be consistent with requirements in Permit Attachment B, Section B-6a.	Added bullet “Corrections to electronic records shall indicate the individual making the change, field changed, reason for the change, and change made. Data changes shall only be made by the individual who originally collected the data or an individual authorized to change the data.”

Reference	Explanation for Change	Proposed Change
Permit Attachment B6, Table B6-1, Item 37	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-10d.	Changed “Are procedures in place to ensure that 100 % of batch data reports are subject to non-programmatic technical review by an individual qualified to review the data. The reviewer shall release the data through signature with an associated review checklist prior to characterization of the associated waste and shipment to the WIPP. The review shall ensure the following, as applicable:” to “Are procedures in place to ensure that 100 % of batch data reports are subject to Independent technical review by an individual qualified to review the data. The reviewer shall release the data with an associated review checklist prior to management, storage, or disposal of the associated waste at the WIPP. The review shall ensure the following, as applicable:”
Permit Attachment B6, Table B6-1, Item 37	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-10d.	Changed “Radiography tapes are reviewed on a waste container basis at a minimum of once per testing batch or once per day of operation, whichever is more frequent. The radiography tape will be reviewed against the data on the radiography form to ensure that data are complete and correct” to “Radiography tapes have been reviewed as required in Permit Attachment B, Section B1-3b(2)”.

Reference	Explanation for Change	Proposed Change
Permit Attachment B6, Table B6-1, Item 38	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-10d, B3-10e.	Changed “Are procedures in place to ensure that 100 percent of all batch data reports receive a technical supervisory signature release with an associated review checklist prior to characterization of the associated waste and shipment to the WIPP. This release shall ensure the following:” to “Are procedures in place to ensure that 100 percent of all batch data reports receive a technical supervisory signature release with an associated review checklist prior to management, storage, or disposal of the associated waste at the WIPP, unless an electronic data evaluation system is used, in which case technical supervisor review is not required. This release shall ensure the following::”
Permit Attachment B6, Table B6-1, Item 38	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-10d.	Changed “All data have received non-programmatic technical review” to “All data have received Independent technical review”
Permit Attachment B6, Table B6-1, Item 38	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-10d, B3-10e.	Added statement “If the generator/storage site uses an electronic data evaluation system, did the Independent Technical Review ensure the data are technically reasonable based on the technique used?”
Permit Attachment B6, Table B6-1, Item 39	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-10f.	Changed “Are procedures in place to ensure that 100 percent of all batch data reports receive a QA Officer signature release with an associated review checklist prior to characterization of the associated waste and shipment to the WIPP. This release shall ensure the following:” to “Are procedures in place to ensure that 100 percent of all batch data reports receive a QA Officer release with an associated review checklist prior to management, storage, or disposal of the associated waste at the WIPP, unless an electronic data evaluation system is used, in which case QA officer review is not required. This release shall ensure the following:”

Reference	Explanation for Change	Proposed Change
Permit Attachment B6, Table B6-1, Item 39	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-10f.	Changed “Non-programmatic technical and technical supervisory review have been performed and documented through signature“ to “ technical supervisory and Independent Technical review have been performed and documented through release ”
Permit Attachment B6, Table B6-1, Item 39	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-10f.	Changed “The testing, sampling, and QA documentation is complete” to “The QA documentation is complete”.
Permit Attachment B6, Table B6-1, Item 40	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-11c.	Changed “Are procedures in place to ensure that 100 percent of all batch data reports receive a Site Project Manager signature release with an associated review checklist prior to characterization of the associated waste and shipment to the WIPP. This release shall ensure the following:” to “Are procedures in place to ensure that 100 percent of all batch data reports receive a Site Project Manager release with an associated review checklist prior to management, storage, or disposal of the associated waste at the WIPP. If an electronic data evaluation system is used, the Site Project Manager will instead review the Electronic Data Evaluation Report and release the data. This release shall ensure the following:”
Permit Attachment B6, Table B6-1, Item 40	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-11c.	Changed “Non-programmatic technical reviews, technical supervisory reviews, and QA Officer reviews have been performed and documented through signature” to “technical supervisory and Independent Technical reviews, and QA Officer reviews have been performed and documented through checklists and appropriate releases”.
Permit Attachment B6, Table B6-1, Item 40	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-11c.	Changed “Data have been verified to be within established data assessment criteria nd meet all applicable QAOs” to “Data have been verified to be within established data assessment criteria and meet all applicable QAOs”.

Reference	Explanation for Change	Proposed Change
Permit Attachment B6, Table B6-1, Item 40	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-11c.	Deleted the following bullets: "Sampling, testing, and analytical batches are complete and data are reported to the correct units, qualifier flags, and significant figures." and "The testing, sampling, and QA data review checklists are complete".
Permit Attachment B6, Table B6-1, Item 41	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-11a, B3-11b.	Changed "At the project level, are procedures in place to ensure that 100 percent of all batch data reports shall have a Site Project QA Officer signature release with an associated review checklist prior to characterization of the associated waste and shipment to the WIPP. This release shall ensure the following:" to "At the project level, are procedures in place to ensure that 100 percent of all batch data reports shall have a Site Project QA Officer release with an associated review checklist prior to management, storage, or disposal of the associated waste at the WIPP. This release shall ensure the following:"
Permit Attachment B6, Table B6-1, Item 41	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-11a, B3-11b.	Inserted the following bullets: Batch Data Reports are complete and data are properly reported (i.e., data are reported in correct units, and, if applicable, with correct qualifying flags). • Sampling batch QC checks (e.g., equipment blanks, field duplicates, field reference standards) were properly performed, meet the established QAOs, and are within established data useability criteria. • Testing batch QC checks (e.g., replicate scans, measurement system checks) were properly performed. Radiography data are complete and acceptable based on evidence of videotape review as specified in B1-3b(2).

Reference	Explanation for Change	Proposed Change
		• Analytical batch QC checks (e.g., laboratory duplicates, laboratory blanks, matrix spikes, matrix spike duplicates, laboratory control samples) were properly performed and meet the established QAOs and are within established data useability criteria. • On-line batch QC checks (e.g., field blanks, on-line blanks, on-line duplicates, on-line control samples) were properly performed and meet the established QAOs and are within established data useability criteria. • The ITR has verified that proper procedures were followed to ensure representative samples of headspace gas and homogeneous solids and soil/gravel were taken.

Reference	Explanation for Change	Proposed Change
Permit Attachment B6, Table B6-1, Item 41	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-11a, B3-11b.	Deleted the following bullets: • Sampling batch field QC checks were properly performed and meet established QAOs and data usability criteria • Testing batch QC checks were properly performed • Analytical batch and on-line QC Checks were properly performed and meet established QAOs and data usability criteria • Radiography data are complete and acceptable • Data are properly reported (i.e., correct units, correct significant figures, and appropriate qualifier flags) • Proper procedures were used to ensure that representative headspace gas and core samples were collected".
Permit Attachment B6, Table B6-1, Item 41	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-11b.	Added the following statement: "If an electronic data evaluation system is used, the Site Project QA Officer will instead ensure that any required nonconformance reports are prepared."
Permit Attachment B6, Table B6-1, Item 42	Permit modification request proposes to eliminate the quarterly repeat of data review process.	Deleted this item, "Are procedures in place to ensure that a repeat of the data review process at the data generation level will be performed on a minimum of one randomly chosen waste container every quarter to determine if the verification and validation is performed according to documented procedures?"

Reference	Explanation for Change	Proposed Change
Permit Attachment B6, Table B6-1, Item 43	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-11a.	Changed “Are procedures in place and checklists are available to prepare a Site Project QA Officer Summary and a Data Validation Summary (the summaries may be in the same document)? The QA Officer Summary should include, on a waste container basis, a validation checklist for each batch that is of sufficient detail to document all aspects of the testing, sampling, and analytical batch that could affect data quality. The Data Validation Summary should confirm that all data were validated according to site QAPP requirements, indicate analytical batches, identify all problems, and identify all acceptable and unacceptable data.” to “Are procedures in place and checklists are available to prepare a Site Project QA Officer Summary and a Data Validation Summary (the summaries may be in the same document)? The QA Officer Summary should include a validation checklist for each batch that is of sufficient detail to document all aspects of the batch data report that could affect data quality. The Data Validation Summary should confirm that all data were validated according to site QAPP requirements, indicate batch data report reviewed, identify all problems, and include a statement that all data are acceptable.”

Reference	Explanation for Change	Proposed Change
Permit Attachment B6, Table B6-1, Item 45	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-14.	Changed “Are procedures in place to ensure that nonconformances are appropriately identified, reconciled, corrected, and documented? Are nonconformance reports prepared for nonconformances identified? Are nonconformances identified and tracked, and does the site Project QA Officer oversee the nonconformance report process?” to “Are procedures in place to ensure that nonconformances are appropriately identified, reconciled, corrected, and documented? Are nonconformance reports prepared for nonconformances identified? Are nonconformances identified and tracked, and does the site Project QA Officer (or designee) oversee the nonconformance report process?”
Permit Attachment B6, Table B6-1, Item 46	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-14.	Changed “Proper labeling and/or tagging including proper sample numbering, sample identification, sample date, sampling conditions, and analysis requested? ” to “Proper labeling and/or tagging including proper sample numbering, sample identification, sample date, sampling conditions, and analysis requested? This requirement may also be addressed through the use of barcodes.”
Permit Attachment B6, Table B6-1, Item 48	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-10a.	Changed “Are procedures in place to ensure that the generator/storage site transmits data by hard copy or electronic copy from the data generation level to the site project level after all data generation and project level validations are complete? If electronic, does the generator/site have a hard copy available on demand?” to “Are procedures in place to ensure that the generator/storage site transmits data by hard copy or electronic copy from the Data Generation Level to the Site Project Level after all Data Generation and Site Project Level validations are complete? If electronic, does the generator/site have a hard copy available on demand?”

Reference	Explanation for Change	Proposed Change
Permit Attachment B6, Table B6-1, Items 49, 53, 54,	Requirements previously deleted from Permit.	These items are proposed for deletion.
Permit Attachment B6, Table B6-1, Item 56	Text modified to be consistent with requirements in Permit Attachment B3, Section B3-11g.	Deleted the following text “Are procedures in place to assure that ongoing container characterization results are cross reference to Batch Data Reports?”
Permit Attachment B6, Table B6-1, Item 68	Text modified to be consistent with requirements in Permit Attachment B, Table B-7.	Deleted Waste Stream Characterization Package. Replaced Data Reconciliation Report with Data Validation Summary.
Permit Attachment B6, Table B6-1, Items 74a through 74d	These items address electronic data evaluation.	Added items.
Permit Attachment B6, Items 278, 282	Requirement to review tape from every tenth container is not reflected in the text.	Changed requirement regarding review of radiography tapes to refer to permit.

Attachment B: Proposed Changes to Permit Module II

Reference	Affected Text
Permit Condition II.C.1.g.	WIPP Waste Information System (**WWIS**) database - the Permittees shall provide the Secretary access to the WWIS database as necessary to determine compliance with the WAP. The WWIS shall meet all requirements presented in Section B-6b~~4b(1)(i)~~ of the WAP, Permit Attachment B~~, prior to acceptance of TRU mixed waste~~. The Secretary's access to the WWIS shall be direct, read-only (via modem or Internet) to all query and reporting functions of the Characterization, Certification, Shipping, and Inventory modules of the WWIS database.
Permit Condition II.C.2.a.	Requirement to audit - the Permittees shall demonstrate to the Secretary that the generator/storage sites have implemented and comply with applicable requirements of the WAP by conducting an audit of the generator/storage sites as specified in Permit Attachment B, Section B-5~~4b(1)(iii)~~, and Permit Attachment B6 (Waste Isolation Pilot Plant Permittees' Audit and Surveillance Program), and as required by 20.4.1.500 NMAC (incorporating 40 CFR §264.13).
Permit Condition II.C.5 (new condition)	Electronic Availability The Permittees shall provide access to the web site and WWIS, as well as any WIPP internet-based electronic data management systems, in accordance with the following requirements:
Permit Condition II.C.5.a (new condition)	These systems shall be available during the core hours as established by local human resources policy.
Permit Condition II.C.5.b (new condition)	Scheduled maintenance and routine backups shall be scheduled out of core hours. In the event that scheduled maintenance or routine backups breach core hours, NMED shall be notified via electronic mail.
Permit Condition II.C.5.c (new condition)	Unscheduled interruptions shall be evaluated by the Permittees on a case-by-case basis to determine if NMED notification is required.
Permit Condition II.C.5.d (new condition)	WWIS software updates will be provided to NMED.

Reference	Affected Text
Permit Condition II.C.5.e (new condition)	The Permittees shall provided technical support via telephone during core hours.
Permit Condition II.C.5.f (new condition)	Upon request, the Permittees shall provide orientation for specialty software to NMED.

Attachment C: Proposed Changes to Permit Attachment B

(Note that Permit Attachment B is included in its entirety due to the number of changes included in this permit modification request.)

ATTACHMENT B

WASTE ANALYSIS PLAN

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ATTACHMENT B

WASTE ANALYSIS PLAN

TABLE OF CONTENTS

List of Tables

List of Figures

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ATTACHMENT B

WASTE ANALYSIS PLAN

Introduction ~~and Attachment Highlights~~

This waste analysis plan (**WAP**) has been prepared for management, storage, or disposal activities to be conducted at the Waste Isolation Pilot Plant (**WIPP**) facility to meet requirements set forth in 20.4.1.500 New Mexico Administrative Code (**NMAC**) (incorporating 40 Code of Federal Regulations (**CFR**) §264.13). Guidance in the most recent U.S. Environmental Protection Agency (**EPA**) manual on waste analysis has been incorporated into the preparation of this WAP (EPA, 1994). This WAP includes test methods, details of planned waste sampling and analysis, a description of the waste shipment screening and verification process, and a description of the quality assurance (**QA**)/quality control (**QC**) program. Before the Permittees manage, store, or dispose transuranic (**TRU**) mixed waste from a generator/storage site (**site**), the Permittees shall require that site to implement the applicable requirements of this WAP.

TRU mixed waste that may be stored or disposed at WIPP are or were generated at U.S. Department of Energy (**DOE**) generator/storage sites by various specific processes and activities. Examples of the major types of operations that generate this waste include:

- Production of Nuclear Products—Production of nuclear products includes reactor operation, radionuclide separation/finishing, and weapons fabrication and manufacturing. The majority of the TRU mixed waste was generated by weapons fabrication and radionuclide separation/finishing processes. More specifically, wastes consist of residues from chemical processes, air and liquid filtration, casting, machining, cleaning, product quality sampling, analytical activities, and maintenance and refurbishment of equipment and facilities.

- Plutonium Recovery—Plutonium recovery wastes are residues from the recovery of plutonium-contaminated molds, metals, glass, plastics, rags, salts used in electrorefining, precipitates, firebrick, soot, and filters.

- Research and Development (**R&D**)—R&D projects include a variety of hot cell or glovebox activities that often simulate full-scale operations described above, producing similar TRU mixed wastes. Other types of R&D projects include metallurgical research, actinide separations, process demonstrations, and chemical and physical properties determinations.

- Decontamination and Decommissioning (**D&D**)—Facilities and equipment that are no longer needed or usable are decontaminated and decommissioned, resulting in TRU mixed wastes consisting of scrap materials, cleaning agents, tools, piping, filters, Plexiglas™, gloveboxes, concrete rubble, asphalt, cinder blocks, and other building materials. These materials are expected to be the largest category by volume of TRU mixed waste to be generated in the future.

TRU mixed waste contains both TRU radioactive and hazardous components, as defined in 20.4.1.800 NMAC (incorporating 40 CFR~~,~~ §268.35(d)), and in the Federal Facility Compliance Act, Public Law 102-386, Title 1, §3021(d). It is designated and separately packaged as either contact-handled (**CH**) or remote-handled (**RH**), based on the radiological dose rate at the surface of the waste container. RH TRU mixed wastes will not be received and disposed at the WIPP facility.

The hazardous components of the TRU mixed waste to be managed at the WIPP facility are designated in the Permittees' Resource Conservation and Recovery Act (**RCRA**) Part A Permit Application (Permit Attachment O). Some of the waste may also be identified by unique state hazardous waste codes. These wastes are acceptable at the WIPP as long as the Treatment, Storage, or Disposal Facility Waste Acceptance Criteria (**TSDF-WAC**) in Module II are met. This WAP describes the measures that will be taken to assure that the TRU mixed wastes received at the WIPP facility are within the scope of the RCRA Part A Permit Application (Permit Attachment O) as established by 20.4.1.500 NMAC (incorporating 40 CFR §264), and that they comply with unit-specific requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264 Subpart X ~~.600~~), Miscellaneous Units.

The Permittees will ensure all waste streams are characterized as required by this WAP. If new EPA hazardous waste codes are identified during the characterization process, those wastes will be prohibited for disposal at the WIPP facility until a permit modification has been submitted to and approved by the New Mexico Environment Department (**NMED**) for these new EPA hazardous waste codes. Similar waste streams at other generator/storage sites will be examined by the Permittees to ensure that the newly identified EPA hazardous waste codes do not apply to those similar waste streams. If the other waste streams also require new EPA hazardous waste codes, shipment of these similar waste streams will also be prohibited for disposal until a permit modification has been submitted to and approved by NMED.

~~Some TRU mixed waste is retrievably stored at the DOE generator/storage sites. Additional TRU mixed waste will be generated and packaged into containers at these generator/storage sites in the future. TRU mixed waste will be retrieved from storage areas at a DOE generator/storage site. Retrievably stored waste is defined as TRU mixed waste generated after 1970 and before NMED notifies the Permittees, by approval of the final audit report, that the characterization requirements of the WAP at a generator/storage site have been implemented. Newly generated waste is defined as TRU mixed waste generated after NMED approves the final audit report for a generator/storage site. Retrievably stored TRU mixed waste will be characterized on an ongoing basis, as the waste is retrieved. Newly generated TRU mixed waste shall be characterized as it is generated. Waste characterization requirements for retrievably stored and newly generated TRU mixed wastes differ, as discussed in Sections B-3d(1) and B-3d(2).~~

~~Characterization requirements for individual containers of TRU mixed waste are specified on a waste stream basis. A waste stream is defined as waste material generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents. Waste streams are grouped by Waste Matrix Code Groups related to the physical and chemical properties of the waste. Generator/storage sites shall use the characterization techniques described in this WAP to assign appropriate Waste Matrix Code Groups for WIPP disposal. The Waste Matrix Code Groups are solidified inorganics, solidified organics, salt waste, soils, lead/cadmium metal, inorganic nonmetal waste, combustible waste, graphite, filters,~~

heterogeneous debris waste, and uncategorized metal. Waste Matrix Code Groups can be grouped into three Summary Category groups: Homogenous Solids (Summary Category S3000), Soil/Gravel (Summary Category S4000), and Debris Waste (Summary Category S5000).

TRU mixed wastes are initially categorized into the three broad Summary Category Groups that are related to the final physical form of the wastes. Waste characterization requirements for these groups are specified separately in Section B-2 of this WAP. Each of the three groups is described below.

S3000 - Homogeneous Solids

Homogenous solids, or solid process residues, are defined as solid materials, excluding soil, that do not meet the NMED criteria for classification as debris (20.4.1.800 NMAC (incorporating 40 CFR §268.2[g] and [h])). Included in the series of solid process residues are inorganic process residues, inorganic sludges, salt waste, and pyrochemical salt waste. Other waste streams are included in this Summary Category Group based on the specific waste stream types and final waste form. This Summary Category Group is expected to contain toxic metals and spent solvents. This category includes wastes that are at least 50 percent by volume solid process residues.

S4000 - Soils/Gravel

This Summary Category Group includes S4000 waste streams that are at least 50 percent by volume soil/gravel. This Summary Category Group is expected to contain toxic metals. Soils/gravel are further categorized by the amount of debris included in the matrix.

S5000 - Debris Wastes

This Summary Category Group includes heterogenous waste that is at least 50 percent by volume materials that meet the criteria specified in 20.4.1.800 NMAC (incorporating 40 CFR §268.2 (g)). Debris means solid material exceeding a 2.36 inch (in.) (60 millimeter) particle size that is intended for disposal and that is:

1. a manufactured object, or
2. plant or animal matter, or
3. natural geologic material.

Particles smaller than 2.36 inches in size may be considered debris if the debris is a manufactured object and if it is not a particle of S3000 or S4000 material.

If a waste does not include at least 50 percent of any given category by volume, characterization shall be performed using the waste characterization process required for the category constituting the greatest volume of waste for that waste stream (see Section B-3d).

The most common hazardous constituents in the TRU mixed waste to be managed in the WIPP facility consist of the following:

Metals

Some of the TRU mixed waste to be emplaced in the WIPP facility contains metals for which 20.4.1.200 NMAC (incorporating 40 CFR §261.24), toxicity characteristics were established (EPA hazardous waste codes D004 through D011). Cadmium, chromium, lead, mercury, selenium, and silver are present in discarded tools and equipment, solidified sludges, cemented laboratory liquids, and waste from decontamination and decommissioning activities. A large percentage of the waste consists of lead-lined gloveboxes, leaded rubber gloves and aprons, lead bricks and piping, lead tape, and other lead items. Lead, because of its radiation-shielding applications, is the most prevalent toxicity-characteristic metal present.

Halogenated Volatile Organic Compounds

Some of the TRU mixed waste to be emplaced in the WIPP facility contains spent halogenated volatile organic compound (**VOC**) solvents identified in 20.4.1.200 NMAC (incorporating 40 CFR, §261.31) (EPA hazardous waste numbers F001 through F005).

~~Tetrachloroethylene; trichloroethylene; methylene chloride; carbon tetrachloride; 1,1,1-trichloroethane; and 1,1,2-trichloro-1,2,2-trifluoroethane (EPA hazardous waste codes F001 and F002) are the most prevalent halogenated organic compounds identified in TRU mixed waste that may be managed at the WIPP facility during the Disposal Phase. These compounds are commonly used to clean metal surfaces prior to plating, polishing, or fabrication; to dissolve other compounds; or as coolants. Because they are highly volatile, only small amounts typically remain on equipment after cleaning or, in the case of treated wastewaters, in the sludges after clarification and flocculation. Radiolysis may also generate halogenated volatile organic compounds.~~

~~Nonhalogenated Volatile Organic Compounds~~

~~Xylene, methanol, and n-butanol are the most prevalent nonhalogenated VOCs in TRU mixed waste that may be managed at the WIPP facility during the Disposal Phase. Like the halogenated VOCs, they are used as degreasers and solvents and are similarly volatile. The same analytical methods that are used for halogenated VOCs are used to detect the presence of nonhalogenated VOCs. Radiolysis may also generate non-halogenated volatile organic compounds.~~

~~All waste characterization activities specified in this WAP and associated Permit Attachments shall be carried out at generator/storage sites and, as applicable, at the WIPP facility in accordance with this WAP. The Permittees will audit generator/storage site waste characterization programs and activities as described in Section B-3. Waste characterization activities at the generator/storage sites include the following, although not all these techniques will be used on each container, as discussed in Section B-3:~~

- ~~Radiography, which is an x-ray technique to determine physical contents of containers~~

- ~~Visual examination of opened containers as an alternative way to determine their physical contents or to verify Radiography results~~

- ~~Headspace-gas sampling to determine VOC content of gases in the void volume of the containers~~

- ~~Sampling and analysis of waste forms that are homogeneous and can be representatively sampled to determine concentrations of hazardous waste constituents and toxicity characteristic contaminants of waste in containers~~

- ~~Compilation of acceptable knowledge documentation into an auditable record[†]~~

~~Once the required waste characterization is complete, the generator/storage site will complete a Waste Stream Profile Form to document the results of their characterization activities (Section B-1d). The Waste Stream Profile Forms and the Characterization Information Summary for the waste stream resulting from waste characterization activities shall be transmitted to the Permittees, reviewed for completeness, and screened for acceptance prior to loading any TRU mixed waste into the Transuranic Package Transporter (**TRUPACT-II**) at the generator facility, as described in Section B-4. Only TRU mixed waste and TRU waste that has been characterized in accordance with this WAP and that meets the **TSDF-WAC** specified in this Permit will be accepted at the WIPP facility for disposal in a permitted Underground Hazardous Waste Disposal Unit (**HWDU**).~~

~~In the event the Permittees request detailed information on a waste stream, the site will provide a Waste Stream Characterization Package (Section B3-12b(2)). For each waste stream, this package will include the WSPF, the Characterization Information Summary, and the complete AK summary. The Waste Stream Characterization Package will also include specific Batch Data Reports and raw analytical associated with waste container characterization as requested by the Permittees.~~

~~[†] "Auditable records" mean those records which allow the Permittees to conduct a systematic assessment, analysis, and evaluation of the Permittees compliance with the WAP and this Permit.~~

B-1 Identification of TRU Mixed Waste to be Managed at the WIPP Facility

B-1a Waste Stream Identification

TRU mixed waste destined for disposal at WIPP will be characterized on a waste stream basis. A waste stream is defined as waste material generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents. Generator/storage sites will delineate waste streams using acceptable knowledge (**AK**). Required AK ~~acceptable knowledge~~ is specified in Section B-3b and Permit Attachment B4. If AK ~~acceptable knowledge~~ for retrievably stored waste does not comply with these requirements (i.e., heterogeneous Debris Waste in Summary Category S5000), the Permittees will reexamine (and characterize) the waste in the same manner as newly generated waste.

All of the waste within a waste stream may not be available for sampling and analysis at one time. In these instances, generator/storage sites may divide waste streams into waste stream lots based on staging, transportation, or handling issues. Characterization activities shall then be undertaken on a waste stream lot basis. A Waste Stream Profile Form (**WSPF**) need not be submitted for subsequent waste stream lots unless warranted by the characterization information.

B-1b Waste Summary Category Groups and Hazardous Waste Accepted at the WIPP Facility

Waste streams are grouped by Waste Matrix Code Groups related to the physical and chemical properties of the waste. Generator/storage sites shall use the characterization techniques described in this WAP to assign appropriate Waste Matrix Code Groups for WIPP disposal. The Waste Matrix Code Groups are solidified inorganics, solidified organics, salt waste, soils, lead/cadmium metal, inorganic nonmetal waste, combustible waste, graphite, filters, heterogeneous debris waste, and uncategorized metal. Once a waste stream has been delineated, generator/storage sites will assign a Waste Matrix Code to the waste stream based on the physical form of the waste. Waste streams are then assigned to one of three broad Summary Category Groups; S3000-Homogeneous Solids, S4000-Soils/Gravel, and

S5000-Debris Wastes. These Summary Category Groups are used to determine further characterization requirements. Each of the three groups is described below.

S3000 - Homogeneous Solids

Homogeneous solids, or solid process residues, are defined as solid materials, excluding soil, that do not meet the NMED criteria for classification as debris (20.4.1.800 NMAC (incorporating 40 CFR §268.2[g] and [h])). Included in the series of solid process residues are inorganic process residues, inorganic sludges, salt waste, and pyrochemical salt waste. Other waste streams are included in this Summary Category Group based on the specific waste stream types and final waste form. This Summary Category Group is expected to contain toxic metals and spent solvents. This category includes wastes that are at least 50 percent by volume solid process residues.

S4000 - Soils/Gravel

This Summary Category Group includes S4000 waste streams that are at least 50 percent by volume soil/gravel. This Summary Category Group is expected to contain toxic metals. Soils/gravel are further categorized by the amount of debris included in the matrix.

S5000 - Debris Wastes

This Summary Category Group includes heterogeneous waste that is at least 50 percent by volume materials that meet the criteria specified in 20.4.1.800 NMAC (incorporating 40 CFR §268.2 (g)). Debris means solid material exceeding a 2.36 inch (in.) (60 millimeter) particle size that is intended for disposal and that is:

1. a manufactured object, or
2. plant or animal matter, or
3. natural geologic material.

Particles smaller than 2.36 inches in size may be considered debris if the debris is a manufactured object and if it is not a particle of S3000 or S4000 material.

If a waste does not include at least 50 percent of any given category by volume, characterization shall be performed using the waste characterization process required for the Summary Category Group constituting the greatest volume of waste for that waste stream (see Section B-3d).

~~The Permittees will only allow generators to ship those TRU mixed waste streams with EPA hazardous waste codes listed on the Permittees' RCRA Part A Permit Application (Permit Attachment O). Some of the waste may also be identified by unique state hazardous waste codes. These wastes are acceptable at the WIPP as long as the TSDF-WAC are met. The Permittees will perform characterization of all waste streams as required by this WAP. If during the characterization process, new EPA hazardous waste codes are identified, those wastes will be prohibited for disposal at the WIPP facility until a permit modification has been submitted to and approved by the NMED for these new EPA hazardous waste codes. Similar waste streams at other generator/storage sites will be examined by the Permittees to ensure that the newly identified EPA hazardous waste codes do not apply to those similar waste streams. If the other waste streams also require new EPA hazardous waste code, shipment of these similar waste streams will also be prohibited for disposal until a permit modification has been submitted to and approved by NMED.~~

B-1c Waste Prohibited at the WIPP Facility

The following TRU mixed waste are prohibited at the WIPP facility :

- liquid waste (waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers shall contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any payload container (e.g., 55 gallon drum or standard waste box) may not exceed 1 percent volume of that container)

- non-radionuclide pyrophoric materials, such as elemental potassium

- hazardous wastes not occurring as co-contaminants with TRU mixed wastes (non-mixed hazardous wastes)

- wastes incompatible with backfill, seal and panel closures materials, container and packaging materials, shipping container materials, or other wastes

- wastes containing explosives or compressed gases

- wastes with polychlorinated biphenyl (**PCB**) concentrations equal to or greater than 50 parts per million

- wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (EPA Hazardous Waste Numbers of D001, D002, or D003)

- RH TRU mixed waste (waste with a surface dose rate of 200 millirem per hour or greater)

- any waste container that does not have Volatile Organic Compound (**VOC**) concentration values reported for the headspace

- any waste container which has not undergone either radiographic or visual examination (VE)

- any waste container from a waste stream which has not been preceded by an appropriate, certified WSPF (see Section B-1d)

~~Before accepting a container holding TRU mixed waste, the Permittees will ensure, through audit and as part of their Permittee-level data reviews (Section B3-10c), that generator/storage sites examine the radiography or visual examination data records (Section B-4b) to verify that the container holds no unvented compressed gas containers and that residual liquid does not exceed 1 percent volume in any payload container. If discrepancies or inconsistencies are~~

~~detected during the data review, the generator/storage site will review the radiography video tape or visual examination tape to verify that the observed physical form of the waste is consistent with the waste stream description provided by the generator and to ensure that no prohibited items are present in the waste. Radiography tapes will be selected randomly from at least one percent of containers received at WIPP and will be reviewed and compared to radiographic data forms. All personnel who review radiography video tapes will be trained to the same standard as radiography operators. Section B-4 includes a description of the waste verification process that the Permittees will conduct prior to receiving a shipment at the WIPP facility.~~

~~Containers are vented through filters or, allowing any gases that are generated by radiolytic and microbial processes within a waste container to escape, thereby preventing over pressurization or development of conditions within the container that would lead to the development of ignitable, corrosive, reactive, or other characteristic wastes.~~

~~To ensure the integrity of the WIPP facility, waste streams identified to contain incompatible materials or materials incompatible with waste containers cannot be shipped to WIPP unless they are treated to remove the incompatibility. Only those waste streams that are compatible or have been treated to remove incompatibilities will be shipped to WIPP.~~

~~The VOC concentrations in the headspace of waste containers have been limited to those which, when averaged on a room basis, will ensure compliance with the performance standards. These limits are presented in Table B-2 as maximum allowable VOC room-averaged headspace concentration limits. There are no maximum allowable headspace gas concentration limits for individual containers, as some containers can exceed these values as long as container headspace averages in a disposal room do not.~~

B-1d Control of Waste Acceptance

Permit Attachment B3 Section B3-12b addresses Permittee responsibilities for control of waste acceptance. ~~Every waste stream shipped to WIPP shall be preceded by a WSPF (Figure B-1)~~

~~The required WSPF information and the Characterization Information Summary elements are found in Section B3-12b(1) and Section B3-12(b).~~

~~Generator/storage sites will provide the WSPF to the Permittees for each waste stream prior to its acceptance for disposal at WIPP. The WSPF and the Characterization Information Summary will be transmitted to the Permittees for each waste stream from a generator/storage site. If continued waste characterization reveals discrepancies that identify different hazardous waste codes or indicates that the waste belongs to a different waste stream, the waste will be redefined to a separate waste stream and a new Waste Stream Profile Form submitted.~~

~~The Permittees are responsible for the review of WSPFs (Section B3-12b(1)) and Characterization Information Summaries to verify compliance with the restrictions on TRU mixed wastes for WIPP disposal. The Permittees will submit completed WSPFs to NMED prior to waste stream shipment . The Permittees will also be responsible for the review of shipping records (see Section B-4b) to verify that each waste container has been prepared and characterized in accordance with applicable provisions of this WAP. Waste characterization data shall confirm the absence of prohibited items specified in Section B-1c.~~

~~As stated in the introduction to Attachment B, any time the Permittees request additional information concerning a waste stream, the generator/storage site will provide a Waste Stream Characterization Package (Section B3-12b(2)). The option for the Permittees to request additional information ensures that the waste being offered for disposal is adequately characterized and accurately described on the WSPF.~~

B-1e Waste Generating Processes at the WIPP Facility

Waste generated as a result of the waste containers handling and processing activities at the WIPP facility is termed “derived” waste. Because derived wastes can contain only those RCRA-regulated materials present in the waste from which they were derived, no additional characterization of the derived waste is required for disposal purposes. In other words, the generator/storage site's characterization data and knowledge of the processes at the WIPP

facility will be used to identify and characterize hazardous waste and hazardous constituents in derived waste. The management of derived waste is addressed in Permit Attachment M1.

B-2 Waste Parameters

The most common hazardous constituents in the TRU mixed waste to be managed in the WIPP facility consist of the following:

Metals

Some of the TRU mixed waste to be emplaced in the WIPP facility contains metals for which 20.4.1.200 NMAC (incorporating 40 CFR §261.24), toxicity characteristics were established (EPA hazardous waste codes D004 through D011). Cadmium, chromium, lead, mercury, selenium, and silver are present in discarded tools and equipment, solidified sludges, cemented laboratory liquids, and waste from D&D activities. A large percentage of the waste consists of lead-lined gloveboxes, leaded rubber gloves and aprons, lead bricks and piping, lead tape, and other lead items. Lead, because of its radiation-shielding applications, is the most prevalent toxicity-characteristic metal present.

Halogenated Volatile Organic Compounds

Some of the TRU mixed waste to be emplaced in the WIPP facility contains spent halogenated VOC solvents identified in 20.4.1.200 NMAC (incorporating 40 CFR, §261.31) (EPA hazardous waste numbers F001 through F005). Tetrachloroethylene; trichloroethylene; methylene chloride; carbon tetrachloride; 1,1,1-trichloroethane; and 1,1,2-trichloro-1,2,2-trifluoroethane (EPA hazardous waste codes F001 and F002) are the most prevalent halogenated organic compounds identified in TRU mixed waste that may be managed at the WIPP facility. These compounds are commonly used to clean metal surfaces prior to plating, polishing, or fabrication; to dissolve other compounds; or as coolants. Because they are highly volatile, only small amounts typically remain on

equipment after cleaning or, in the case of treated wastewaters, in the sludges after clarification and flocculation. Radiolysis may also generate halogenated VOCs.

Nonhalogenated Volatile Organic Compounds

Xylene, methanol, and n-butanol are the most prevalent nonhalogenated VOCs in TRU mixed waste that may be managed at the WIPP facility. Like the halogenated VOCs, they are used as degreasers and solvents and are similarly volatile. The same analytical methods that are used for halogenated VOCs are used to detect the presence of nonhalogenated VOCs. Radiolysis may also generate non-halogenated VOCs.

The following waste analysis parameters shall be characterized at the generator/storage sites:

- Confirmation of physical form and exclusion of prohibited items specified in Section B-1c

- Toxicity characteristic (**TC**) contaminants listed in 20.4.1.200 NMAC (incorporating 40 CFR, §261.24), Table 1 (excluding pesticides), as specified in Permit Attachment O.

- Listed ~~F-listed and P-listed solvents or~~ waste ~~(F001, F002, F003, F004, F005, F006, F007, F009, P015)~~ found in 20.4.1.200 NMAC (incorporating 40 CFR §261.31) as specified in Permit Attachment O.

- Hazardous constituents included in 20.4.1.200 NMAC (incorporating 40 CFR §261) Appendix VIII as specified in Tables B-1, B-3 and B-4, as well as any other hazardous constituent identified through AK ~~acceptable knowledge~~.

Tables B-1, B-3, B-4 and B-5 provide the parameters of interest for the various constituent groupings and analytical methodologies. The following sections provide a description of the acceptable methods to evaluate these parameters for each waste Summary Category Group.

B-3 Characterization Methods

The characterization techniques used by generator/storage sites includes AK ~~acceptable knowledge~~, which incorporates confirmation by headspace-gas sampling and analysis, VE, radiography, and homogeneous waste sampling and analysis. All ~~confirmation~~ characterization activities are performed in accordance with the WAP. Table B-6 provides a summary of the characterization requirements for TRU mixed waste.

TRU mixed waste may be characterized in lots (Section B-1a) and/or batches. A sampling batch can be up to 20 samples (excluding field QC samples), all of which shall be collected within 14 days of the first sample in the batch. An analytical batch can be up to 20 samples (excluding laboratory QC samples), all of which shall be received by the laboratory within 14 days of the validated time of sample receipt of the first sample in the batch. For on-line integrated headspace-gas sampling/analytical systems, samples will be collected within a 12-hour period using the same on-line integrated sampling/analysis system. The analytical requirements are specified by the analytical method being used in the on-line system (e.g., Fourier Transform Infrared Spectroscopy (**FTIRS**), Gas Chromatography/Mass Spectroscopy (**GC/MS**)). ~~Refer to~~ Permit Attachment B3 describes ~~for additional clarification regarding~~ the expected contents of Batch Data Reports, Quality Assurance Objectives, and required data review, validation, verification, and reporting requirements.

B-3a Sampling and Analytical Methods

B-3a(1) Headspace Gas Sampling and Analysis

Headspace-gas samples are used to determine the types and concentrations of VOCs in the void volume of waste containers. Measured headspace VOC concentrations in waste containers received at the WIPP facility will be compared routinely and in accordance with requirements of Permit Attachment N to ensure that, on an annual basis, there are no associated adverse worker or public-health impacts. Table B-2 presents the maximum allowable VOC room-averaged headspace concentration limits. In addition, VOC constituents

will be compared to those assigned by AK ~~acceptable knowledge~~, and the Permittees will assign hazardous waste codes, as warranted. This comparison may include an analysis of radiolytically derived VOCs. The Permittees may also consider radiolysis when assessing the presence of listed waste, and whether radiolysis would generate wastes which exhibit the TC ~~toxicity characteristic~~. Refer to Permit Attachment B4 for additional clarification regarding hazardous waste code assignment and headspace gas results.

Every TRU mixed waste container or statistically selected containers from waste streams that meet the conditions for reduced headspace gas sampling listed in this section will be sampled and analyzed to determine the concentrations of VOCs (presented in Table B-3) in headspace gases. If composite samples are used, containers used in the composite sample must be from the same waste stream with no more than 20 containers being included in a single composite sample. Sampling protocols, equipment, and QA/QC methods for headspace-gas sampling are provided in Permit Attachment B1. ~~In accordance with EPA convention, identification of hazardous constituents detected by gas chromatography/mass spectrometry methods that are not on the list of target analytes shall be reported. These compounds are reported as tentatively identified compounds (**TICs**) in the analytical batch data report and shall be added to the target analyte list if detected in a given waste stream, if they appear in the 20.4.1.200 NMAC (incorporating 40 CFR §261) Appendix VIII, and if they are reported in 25% of the waste containers from a given waste stream. The headspace gas analysis method Quality Assurance Objectives (**QAOs**) are specified in Permit Attachment B3.~~

B-3a(1)(a~~i~~) Reduced Sampling Requirements for Homogeneous Solid or Soil/Gravel Waste Streams with no VOC-Related Hazardous Waste Codes

Headspace gas sampling of homogeneous solid and soil/gravel wastes that have no VOC-related hazardous waste codes assigned may qualify for reduced headspace sampling if they meet the following criteria:

- The waste stream or waste stream lot must consist of more than 10 containers.

- The waste stream must be a homogeneous solid or soil/gravel waste stream that has no VOC-related hazardous waste codes assigned to it.

- The results of the solid sampling and analysis must confirm that no VOC-related hazardous waste codes should be assigned to the waste stream.

If a waste stream meets these conditions for reduced headspace gas sampling, generator/storage sites may choose to randomly select containers for headspace gas sampling and analysis using the statistical approach in Permit Attachment B2, Section B2-2b.

B-3a(1)(b~~ii~~) Reduced Sampling Requirements for Thermally Treated Waste Streams

Headspace gas sampling of homogeneous solid and soil/gravel wastes that have undergone high-temperature thermal processes may qualify for reduced headspace sampling if they meet the following criteria:

- The waste stream or waste stream lot must consist of more than 10 containers.

- The waste stream must have either been generated using a high-temperature thermal process or been subjected to a high-temperature thermal process after generation that resulted in the reduction of matrix-related VOCs in the headspace to concentrations below the Program Required Quantitation Limits (**PRQL**s) in Permit Attachment B3, Table B3-2

- The site must have documentation demonstrating that high-temperature thermal processes were used

If a waste stream meets these conditions for reduced headspace gas sampling, generator/storage sites may choose to randomly select containers for headspace gas sampling and analysis using the statistical approach in Permit Attachment B2, Section B2-2b.

B-3a(2) Homogeneous Waste Sampling and Analysis

Sampling of homogeneous and soil/gravel wastes shall result in the collection of a sample that is used to confirm hazardous waste code assignment by AK ~~acceptable knowledge~~. Sampling is accomplished through core or other EPA approved sampling, which is described in Permit Attachment B1. For those waste streams defined as Summary Category Groups S3000 or S4000 in Section B-1b ~~on page B-3~~, debris that may also be present within these wastes need not be sampled. The waste containers for sampling and analysis are to be selected randomly from the population of containers for the waste stream. The random selection methodology is specified in Permit Attachment B2.

Totals or Toxicity Characteristic Leaching Procedure (**TCLP**) analyses for PCBs, VOCs, semivolatile organic compounds (**SVOC**s), and RCRA-regulated metals are used to determine waste parameters in soils/gravels and solids that may be important to the performance within the disposal system (Tables B-4 and B-5). To determine if a waste exhibits a TC ~~toxicity characteristic~~ for compounds specified in 20.4.1.200 NMAC (incorporating 40 CFR §261, Subpart C), TCLP may be used instead of total analyses. The generator will use the results from these analyses to determine if a waste exhibits a TC ~~toxicity characteristic~~. The mean concentration of ~~toxicity characteristic~~ TC contaminants are calculated for each waste stream such that it can be reported with an upper 90 percent confidence limit (**UCL_{90}**). The UCL_{90} values for the mean measured contaminant concentrations in a waste stream will be compared to the specified regulatory levels in 20.4.1.200 NMAC (incorporating 40 CFR 261 Subpart C), expressed as total/TCLP values, to determine if the waste stream exhibits a TC ~~toxicity characteristic~~. A comparison of total analyses and TCLP analyses is presented in Appendix C3 of the WIPP RCRA Part B Permit Application (DOE, 1997), and a discussion of the UCL_{90} is included in Permit Attachment B2. If ~~toxicity characteristic (~~TC~~)~~ wastes are identified, these will be compared to those determined by AK ~~acceptable knowledge~~ and TC waste codes will be revised, as warranted. Refer to Permit Attachment B4 for additional clarification regarding hazardous waste code assignment and homogeneous solid and soil/gravel analytical results.

B-3a(3) Tentatively Identified Compounds ~~Laboratory Qualification~~

In accordance with EPA convention, identification of hazardous constituents detected by GC/MS methods that are not on the target analyte list shall be reported as tentatively identified compounds (**TIC**).

B-3a(3)(a) Reporting of Tentatively Identified Compounds

Both composited and individual container headspace gas, volatile (TCLP/Totals), and semi-volatile (TCLP/Totals) analyses shall be subject to TIC reporting. TICs are identified in accordance with the following SW-846 criteria:

- Relative intensities of major ions in the reference spectrum (ions greater than ten percent (10%) of the most abundant ion) should be present in the sample spectrum.
- The relative intensities of the major ions should agree within ± 20 percent.
- Molecular ions present in the reference spectrum should be present in the sample spectrum
- Ions present in the sample spectrum but not in the reference spectrum should be reviewed for possible background contamination or presence of coeluting compounds
- Ions present in the reference spectrum but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting peaks.
- The reference spectra used for identifying TICs shall include, at minimum, all of the available spectra for compounds that appear in the 20.4.1.200 NMAC

(incorporating 40 CFR Part 261) Appendix VIII list. The reference spectra may be limited to VOCs when analyzing headspace gas samples.

- TICs for headspace gas analyses that are performed through FTIRS analyses shall be identified in accordance with the specifications of SW-846 Method 8410.

TICs shall be reported in accordance with the following criteria:

- A TIC in an individual container headspace gas or solids sample shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 10% of the area of the nearest internal standard.

- A TIC in a composited headspace gas sample that contains 2 to 5 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 2% of the area of the nearest internal standard.

- A TIC in a composited headspace gas sample that contains 6 to 10 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 1% of the area of the nearest internal standard.

- A TIC in a composited headspace gas sample that contains 11 to 20 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 0.5% of the area of the nearest internal standard.

B-3a(3)(b) Addition of Tentatively Identified Compounds to the Target Analyte List

TICs will be added to the target analyte list in accordance with the following criteria:

- TICs identified through headspace gas analyses that (1) meet the SW-846 identification criteria; (2) appear in the 20.4.1.200 NMAC (incorporating 40 CFR §261) Appendix VIII list; and (3) are detected in 25 percent of the samples from a given waste stream will be added to the headspace gas waste stream target list regardless of the hazardous waste listing associated with the waste stream.

- TICs reported from VOC or SVOC analyses that (1) meet the SW-846 identification criteria; (2) appear in the 20.4.1.200 NMAC (incorporating 40 CFR §261) Appendix VIII list; (3) are detected in 25 percent of the samples from a given waste stream; and (4) are a constituent in an F-listed waste may be excluded from the target analyte list for a waste stream if the TIC is a constituent in an F-listed waste whose presence, from AK documentation, is attributable to waste packaging materials or radiolytic degradation. If a listed waste constituent TIC cannot be attributed to waste packaging materials, radiolysis, or other origins, the constituent will be added to the target analyte list and new hazardous waste codes will be assigned, if appropriate. However, for non-toxic F003 constituents, the site may take concentration into account when assessing whether to add a hazardous waste code.

- TICs reported from VOC or SVOC analyses that (1) meet the SW-846 identification criteria; (2) appear in the 20.4.1.200 NMAC (incorporating 40 CFR §261) Appendix VIII list; (3) are detected in 25 percent of the samples from a given waste stream; and (4) are TC parameters shall be added to the target analyte list regardless of origin because the hazardous waste designation for these codes is not based on source. However, for TC constituents, the site may

take concentration into account when assessing whether to add a hazardous waste code.

A permit modification will be submitted to NMED for their approval to add these constituents (and waste codes), if necessary.

~~The Permittees will ensure that generator/storage sites conduct analyses using laboratories that are qualified through participation in the Performance Demonstration Program (DOE, 1995c, d). Required QAOs are specified in Permit Attachment B3. In addition, methods and supporting performance data demonstrating QAO compliance shall be ensured by the Permittees during the annual certification audit.~~

~~Analytical methods used by the laboratories shall: 1) satisfy all of the appropriate QAOs, and 2) be implemented through laboratory-documented standard operating procedures. These analytical QAOs are discussed in detail in Permit Attachment B3.~~

B-3b Acceptable Knowledge

~~Acceptable knowledge (~~AK~~)~~ is used in TRU mixed waste characterization activities in three ways:

- To delineate TRU mixed waste streams
- To assess whether TRU mixed heterogeneous debris wastes exhibit a TC ~~toxicity characteristic~~ (20.4.1.200 NMAC, incorporating 40 CFR §261.24)
- To assess whether TRU mixed wastes are listed (20.4.1.200 NMAC, incorporating 40 CFR §261.31)

AK ~~Acceptable knowledge~~ is discussed in detail in Permit Attachment B4, which outlines the minimum set of requirements which shall be met by the generator/storage sites in order to use

AK ~~acceptable knowledge~~. In addition, Section ~~B-4b(1) of this permit attachment~~ B3-12 describes Permittee responsibilities for the verification of AK ~~acceptable knowledge~~ through sampling and analysis and the Permittees' Audit and Surveillance Program.

B-3c Radiography and Visual Examination

Radiography is a nondestructive qualitative and quantitative technique that involves X-ray scanning of waste containers to identify and verify waste container contents. ~~Visual examination~~ (~~VE~~) constitutes opening a container and physically examining its contents. Radiography and/or VE ~~visual examination~~ will be used to examine every waste container to verify the ~~its~~ physical form of the waste. These techniques can detect liquid wastes and containerized gases, which are prohibited for WIPP disposal. The prohibition of liquids and containerized gases prevents the shipment of corrosive, ignitable, or reactive wastes. Radiography and/or VE will also be able to confirm that the physical form of the waste matches its waste stream description (i.e. Homogeneous Solids, Soil/Gravel, or Debris Waste [including uncategorized metals]). If the physical form does not match the waste stream description, the waste will be designated as another waste stream and assigned the preliminary hazardous waste codes associated with that new waste stream assignment. That is, if radiography and/or VE indicates that the waste does not match the waste stream description arrived at by AK ~~acceptable knowledge~~ characterization, a non-conformance report will be completed and the inconsistency will be resolved as specified in Permit Attachment B4. The proper waste stream assignment will be determined (including preparation of a new WSPF), the correct hazardous waste codes will be assigned, and the resolution will be documented. Refer to Permit Attachment B4 for a discussion of AK ~~acceptable knowledge~~ and its confirmation process.

Generator/storage sites may conduct VE ~~visual examination~~ of waste containers in lieu of radiography. For generator/storage sites that choose to use VE ~~visual examination~~ in lieu of radiography, the detection of any liquid waste in non-transparent inner containers, detected from shaking the container, will be handled by assuming that the container is filled with liquid and adding this volume to the total liquid in the payload container (e.g., 55 gallon drum or Standard Waste Box (**SWB**)). The payload container would be rejected and/or repackaged to exclude the container if it is over the TSDF-WAC limits. When radiography is used, or VE ~~visual examination~~ of transparent containers is performed, if any liquid in inner containers is detected, the volume of liquid shall be added to the total for the payload container. Radiography, or the

equivalent, will be used on the existing/stored waste containers to verify the physical characteristics of the TRU mixed waste correspond with its waste stream identification/waste stream Waste Matrix Code and to identify prohibited items. The results of radiography are verified through VE ~~visual examination~~ of a statistically selected subpopulation of TRU mixed waste containers in each TRU mixed waste summary category group as specified in Permit Attachment B2. Radiography and VE ~~ic examination~~ protocols and QA/QC methods are provided in Permit Attachment B1.

B-3d Characterization Techniques and Frequency for Newly Generated and Retrievably Stored Waste

Some TRU mixed waste is retrievably stored at the DOE generator/storage sites. Retrievably stored waste is defined as TRU mixed waste generated after 1970 and before NMED notifies the Permittees, by approval of the final audit report, that the characterization requirements of the WAP at a generator/storage site have been implemented. Additional TRU mixed waste will be newly generated and packaged into containers at these generator/storage sites in the future. Newly generated waste is defined as TRU mixed waste generated after NMED approves the final audit report for a generator/storage site. Waste characterization requirements for retrievably stored and newly generated TRU mixed wastes differ.

~~Generator/storage sites will use acceptable knowledge to delineate all TRU mixed waste containers into waste streams for the purposes of grouping waste for further characterization. The analyses performed will not differ based on the waste stream, only on the physical form of the waste (i.e., heterogenous debris waste cannot be sampled for totals analyses). Both retrievably stored and newly generated wastes will be delineated in this fashion, though the types of acceptable knowledge used may differ. Section B-3b discusses the use of acceptable knowledge, sampling, and analysis in more detail. Acceptable knowledge is discussed more completely in Permit Attachment B4.~~ Every waste stream will be assigned hazardous waste codes based upon AK ~~acceptable knowledge~~, and the Permittees will confirm these designations using headspace gas (all Summary Category Groups) and solid sampling and analysis (Summary Category Groups S3000 and S4000 only). AK is discussed more completely in Permit Attachment B4.

Radiography and/or VE will be used to verify the physical form of retrievably stored TRU mixed waste. For newly generated waste, physical form and prohibited items will be verified during

packaging (using the VE technique). Radiography and/or VE will also be used in conjunction with AK ~~acceptable knowledge~~ to characterize heterogeneous debris wastes. Radiography and/or VE, and the associated information compiled from AK ~~acceptable knowledge~~ (e.g., age of the waste, generating process) will be used to determine the RCRA-regulated constituents present in the waste.

~~All waste containers (retrievably stored and newly generated) or randomly selected containers from waste streams that meet the conditions for reduced headspace gas sampling listed in Section B-3a(1) are sampled and analyzed for VOCs in the headspace gas. A statistically selected portion of each homogeneous solids and soil/gravel waste stream is sampled and analyzed for RCRA-regulated total VOCs, SVOCs, and metals (see Permit Attachment B2). Sampling and analysis methods used for waste characterization are discussed in Section B-3a. In the process of performing organic headspace and solid sample analyses, nontarget compounds may be identified. These compounds will be reported as TICs. TICs reported in 25% of the samples and listed in 20.4.1.200 NMAC (incorporating 40 CFR §261) Appendix VIII, will be compared with acceptable knowledge data to determine if the TIC is in a listed hazardous waste in the waste stream. TICs identified through headspace gas analyses that meet the Appendix VIII list criteria and the 25 percent identification criteria for a waste stream will be added to the headspace gas waste stream target list, regardless of the hazardous waste listing associated with the waste stream. TICs subject to inclusion on the target analyte list that are toxicity characteristic parameters shall be added to the target analyte list regardless of origin because the hazardous waste designation for these codes is not based on source. However, for toxicity characteristic and non-toxic F003 constituents, the site may take concentration into account when assessing whether to add a hazardous waste code. TICs reported from the Totals VOC or SVOC analyses may be excluded from the target analyte list for a waste stream if the TIC is a constituent in an F-listed waste whose presence is attributable to waste packaging materials or radiolytic degradation from acceptable knowledge documentation. If the TIC associated with a total VOC or SVOC analysis cannot be identified as a component of waste packaging materials or as a product of radiolysis, the Permittees will add these TICs to the list of hazardous constituents for the waste stream (and assign additional EPA listed hazardous waste codes, if appropriate). A permit modification will be submitted to NMED for their approval to add these constituents (and waste codes), if necessary. For toxicity characteristic compounds and non-toxic F003 constituents, the Permittees may consider waste concentration when determining whether to change a hazardous waste code. Refer to Permit Attachment B3 for additional information on TIC identification.~~

Waste characterization solid sampling and analysis activities will differ for retrievably stored waste and newly generated waste. The waste characterization data collection design for each type of waste is described in the following sections. Table B-1 provides a summary of hazardous waste characterization requirements for all TRU mixed waste by waste characterization parameters.

Table B-6 summarizes the parameters, methods, and rationales for stored and newly generated CH TRU mixed wastes according to their waste forms.

WIPP may accept TRU mixed waste that has been repackaged or treated. Repackaged waste shall undergo characterization required of newly generated waste. Repackaged waste shall also undergo headspace gas analysis, and payload container headspace shall be sampled after repackaging, as long as the criteria specified in Permit Attachment B1-1 are met. Treated waste shall be considered newly generated waste, and shall retain the original waste stream's listed hazardous waste code designation.

B-3d(1) Newly Generated Waste

The RCRA-regulated constituents in newly generated wastes will be documented and verified at the time of generation based on AK ~~acceptable knowledge~~ for the waste stream. Newly generated TRU mixed waste characterization will begin with verification that processes generating the waste have operated within established written procedures. Waste containers are delineated into waste streams using AK ~~acceptable knowledge~~. Verification that the physical form of the waste (Summary Category Group) corresponds to the physical form of the assigned waste stream is accomplished during packaging (using the VE technique). This process is ~~different than the process~~ described in Attachment B1-3b(3). ~~and consists of the operator confirming that the waste is assigned to a waste stream that has the correct Summary Category Group for the waste being packaged. If a confirmation cannot be made, corrective actions[2] will be taken as specified in Permit Attachment B3.~~ For newly generated waste (or repackaged retrievably stored waste), i~~I~~nstead of using a video/audio tape as required with VE in support of radiography ~~in Attachment B1-3b(3)~~, the VE technique ~~for newly generated waste (or repackaged retrievably stored waste)~~ uses verification by a second operator. The second

~~[2] "Corrective action" as used in this WAP and its attachments does not mean corrective action as defined under HWA, RCRA, and their implementing regulations.~~

operator must be~~, who is~~ equally trained to the VE requirements, and ~~stipulated in Permit Attachment B1,to~~ provides additional verification by reviewing the contents of the waste container to ensure correct reporting. This includes the second operator confirming that the waste is assigned to a waste stream that has the correct Summary Category Group for the waste being packaged. If confirmation cannot be made ~~If the second operator cannot provide concurrence~~, corrective actions[1] will be taken as specified in Permit Attachment B3. The subsequent waste characterization activities depend on the assigned Summary Category Group, since waste within the Homogeneous Solids and Soils/Gravel Summary Category Groups will be characterized using different techniques than the waste in the Debris Waste Summary Category Group.

All containers of newly generated waste or newly generated waste containers randomly selected from waste streams that meet the conditions for reduced headspace gas sampling listed in Section B-3a(1) will undergo headspace-gas analysis for VOC concentrations prior to shipment. If the Permittees believe the frequency can be reduced in the future based on trends in analytical results, they may provide technical arguments for such a reduction and request a permit modification from NMED. The headspace-gas sampling method is provided in Permit Attachment B1. Headspace gas data will be used to confirm AK ~~acceptable knowledge~~ waste characterization, as specified in Permit Attachment B4.

B-3d(1)(a) Sampling of Newly Generated Homogeneous Solids

Newly generated mixed waste streams of homogeneous solids will be randomly sampled a minimum of once per year for total PCBs, VOCs, SVOCs and metals. An initial ten-sample set, however, will be collected to develop the baseline control chart. Sampling frequency of once per year is only allowed if a process has operated within procedurally established bounds without any process changes or fluctuations which would result in either a new waste stream or the identification of a new hazardous waste constituent in that waste stream. Otherwise, the waste shall be considered as process batches and each batch will undergo sampling and analysis. Process changes and process fluctuations will be determined using statistical process control charting techniques; these techniques require the ten-sample baseline and historical data for determining limits for indicator species and subsequent periodic sampling to assess process

[1] [1] "Corrective action" as used in this WAP and its attachments does not mean corrective action as defined under HWA, RCRA, and their implementing regulations.

behavior relative to historical limits. If the limits are exceeded, the waste stream shall be recharacterized, and the characterization shall be performed according to procedures required for retrievably stored waste (i.e., waste sampling frequency will be increased). The process behind this control charting technique is described in Permit Attachment B2.

Also, as another control of waste generated from a particular process, the bounds for a waste generating process will be established by specific written procedures for that process. Examples of parameter bounds that could affect a waste generated by a process are volumes of input material, change in the input material, and any other changes that would change the output of that process.

To ensure that the generator/storage site procedures for waste generating processes include controls of the waste stream, these procedures will consist of sections containing the following information:

- Responsible organizations for implementing the requirements of the procedure
- Material inputs
- Waste streams generated
- Process controls and range of operation (bounds) that affect final hazardous waste determinations
- Rate and quantity of hazardous waste generated
- List of applicable operating procedures relevant to the hazardous waste determination

Events where procedurally established bounds are exceeded or any condition of normal operation is not being met could trigger an increased sampling frequency of a waste stream. As long as a process does not change outside of established bounds within a year, the waste generated by that process will have the same characteristics, and therefore, a minimum of one sample will be collected annually to verify the lack of variability of that waste stream. Compliance with process procedures and the maintenance of the parameters specified by

those procedures will be verified by the Permittees during the Permittees' Audit and Surveillance Program (Permit Attachment B6).

The records generated by the process procedures will be examined weekly for indications of process changes or limits being exceeded that would change the hazardous constituents identified in the waste stream or add relevant prohibited materials. If these changes are discovered, the Permittees will notify NMED and will not manage, store or dispose the waste stream until a follow-up sample of process waste is collected and analyzed to assess whether the container contents are within those identified on the WSPF. If the second analysis is not consistent with the WSPF information, all waste containers in question will be segregated and a WSPF and waste generation procedures/bounds will be established. Records of that analysis will be available for examination by the auditors and will be provided to NMED upon request. If records of the analysis are not available, the Permittees will not accept the waste stream at the WIPP facility for disposal. If a generator/storage site changes a process but determines that increased sampling is not required because the change will not affect waste generated by that process, the Permittees and NMED shall be notified in the form of a memorandum to the DOE's Carlsbad Field Office (**CBFO**) Waste Characterization Manager. The Permittees shall concur with the decision to not increase the sampling frequency before any additional waste from that process is shipped, and NMED will be notified of the Permittees' decision.

~~The toxicity characteristics of newly generated homogeneous solids and soils/gravel waste streams will be determined using total analysis of toxicity characteristic contaminants or TCLP.~~ To determine if a waste exhibits a TC ~~toxicity characteristic~~ for compounds specified in 20.4.1.200 NMAC (incorporating 40 CFR §261, Subpart C), either TCLP or ~~may be used instead of~~ total analyses may be used. The sampling methods for homogeneous solids and soil/gravel wastes are provided in Permit Attachment B1.

B-3d(1)(b) Sampling of Newly Generated Soils/Gravels

Newly generated soils/gravel waste will be generated primarily by remediation or ~~decontamination and decommissioning (~~D&D~~)~~ activities. Process controls for these types of waste cannot readily be defined and, therefore, sampling cannot follow that used for newly generated homogeneous waste. The number of newly generated soils/gravel waste containers to be sampled will be determined using the procedure specified in Section B-3a(2), wherein a statistically selected portion of the waste will be sampled. The generators shall estimate the

number of containers to be sampled within the waste stream based on the expected volume of the waste stream and whether SWB or 55-gallon drum containers will be used. Refer to Permit Attachment B2 for additional information.

B-3d(2) Retrievably Stored Waste

All retrievably stored waste containers will first be delineated into waste streams using AK ~~acceptable knowledge~~. All retrievably stored waste containers will be examined using radiography to confirm the physical waste form (Summary Category Group), to verify the absence of prohibited items, and to determine the waste characterization techniques to be used based on the Summary Category Groups (i.e., S3000, S4000, S5000). Repackaged retrievably stored waste, or any retrievably stored waste with inadequate AK ~~acceptable knowledge~~, will be characterized using either the retrievably stored or newly generated waste characterization process, whichever results in greater sampling requirements. Radiographic results will be compared to AK ~~acceptable knowledge~~ results to ensure correct Waste Matrix Code assignment and identification of prohibited items. If radiographic analysis does not confirm the physical waste form, waste will be reassigned as specified in Section B-3c. Generator/storage sites may elect to substitute VE ~~visual examination~~ for radiographic analysis.

To confirm the results of radiography, a statistically selected number of the TRU mixed waste container population will be visually examined by opening containers to inspect waste contents ~~to verify radiography results~~. Permit Attachment B2 contains the approach used to statistically select the number of drums to be visually examined. For homogeneous waste and soils/gravels selected for sampling, the containers opened for sampling may be used to help fulfill the VE ~~visual examination~~ requirements.

All retrievably stored containers or retrievably stored containers randomly selected from waste streams that meet the conditions for reduced headspace gas sampling listed in Section B-3a(1) will undergo headspace gas analysis for VOC concentrations. The headspace gas sampling method is provided in Permit Attachment B1. All headspace gas data will be used to confirm AK ~~acceptable knowledge~~ waste characterization, as specified in Permit Attachment B4.

A statistically selected portion of retrievably stored homogeneous solids and soil/gravel wastes will be sampled and analyzed for total VOCs, SVOCs, and metals. The approach used to statistically select drums for homogeneous solids and soil/gravel wastes is different than the

method used to select waste containers for VE ~~visual examination~~. This method is also included in Permit Attachment B2. The sampling methods for these wastes are provided in Permit Attachment B1.

~~The toxicity characteristic of retrievably stored homogeneous solids and soil/gravel wastes will be determined using total analysis of toxicity characteristic parameters or TCLP.~~ To determine if a waste exhibits a TC ~~toxicity characteristic~~ for compounds specified in 20.4.1.200 NMAC (incorporating 40 CFR §261, Subpart C), either TCLP or ~~may be used instead of~~ total analyses may be used. Appendix C3 of the WIPP RCRA Part B Permit Application (DOE, 1997a) discusses comparability of totals analytical results to those of the TCLP method.

Representativeness of containers selected for VE ~~visual examination~~ and waste subjected to homogeneous solids and soil/gravel sampling and analysis will be validated by the generator/storage site and by the Permittees during an audit (Permit Attachment B6) via examination of documentation that shows that true random samples were collected. (Because representativeness is a quality characteristic that expresses the degree to which a sample or group of samples represent the population being studied, the random sampling of waste streams ensures representativeness.)

B-4 ~~Data Verification and Quality Assurance~~ Data Quality Objectives

~~The Permittees will assure that waste characterization by generator/storage sites sending TRU mixed waste to the WIPP for disposal meets WAP requirements through data validation, usability and reporting controls. Verification occurs at three levels: 1) the data generation level, 2) the project level, and 3) the Permittee level. The validation and verification process and requirements at each level is described in Section B3-10.~~

~~B-4a Data Generation and Project Level Verification Requirements~~

~~B-4a(1)~~ Data Quality Objectives

The waste characterization data obtained through WAP implementation will be used to ensure that the Permittees meet regulatory requirements with regard to both regulatory compliance and to ensure that all TRU mixed wastes are properly managed during the Disposal Phase. To satisfy the RCRA regulatory compliance requirements, the following Data Quality Objectives

(**DQO**s) are established by this WAP:

- Headspace-Gas Sampling and Analysis

  – To identify VOCs and quantify the concentrations of VOC constituents in the total waste inventory to ensure compliance with the environmental performance standards of 20.4.1.500 NMAC (incorporating 40 CFR, §264.601(c)), and to confirm hazardous waste identification by AK ~~acceptable knowledge~~.

- Homogeneous Waste Sampling and Analysis

  – To compare UCL_{90} values for the mean measured contaminant concentrations in a waste stream with specified TC ~~toxicity characteristic~~ levels in 20.4.1.200 NMAC (incorporating 40 CFR §261), to determine if the waste is hazardous, and to confirm hazardous waste identification by AK ~~acceptable knowledge~~.

  – To report the average concentration of hazardous constituents in a waste stream, as specified in 20.4.1.200 NMAC (incorporating 40 CFR §261) Appendix VIII, with a 90 percent confidence interval, with all averages greater than PRQL considered a detection and subsequent assignment of the waste (if an adequate explanation for the constituent cannot be determined) as a hazardous waste, and to confirm hazardous waste identification by AK ~~acceptable knowledge~~.

- Radiography

  – To verify the TRU mixed waste streams by Waste Matrix Code for purposes of physical waste form identification and determination of sampling and analytical requirements, to identify prohibited items, and to confirm the waste stream delineation by AK ~~acceptable knowledge~~.

- Visual Examination

  – To verify the TRU mixed waste streams by Waste Matrix Code for purposes of physical waste form identification, determination of sampling and analytical requirements, and to identify prohibited items.

  – To provide a process check on a sample basis by verifying the information determined by radiography, and to confirm the waste stream delineation by AK ~~acceptable knowledge~~.

Reconciliation of these DQOs by the Generator/Storage Site Project Manager is addressed in Permit Attachment B3. Reconciliation requires determining whether sufficient type, quality, and quantity of data have been collected to ensure the DQO's cited above can be achieved. Reconciling the results of waste testing and analysis with the DQOs provides a way to ensure that data will be of adequate quality to support the regulatory compliance programs.

B-5 Permittees' Audit and Surveillance Program

An important part of the Permittees' verification process is the Permittees' Audit and Surveillance Program. The focus of this audit program is compliance with this WAP and the Permit. This audit program addresses all waste testing, sampling, and analysis activities, from waste stream classification assignment through final loading of the Transuranic Packaging Transporter-model II (**TRUPACT-II**), and ensures compliance with Standard Operating Procedures (**SOP**) and the WAP. Audits will assure that containers and their associated documentation are adequately tracked throughout the waste handling process. Operator qualifications will be verified, and QA/QC procedures will be surveyed. A final report that includes generator/storage site audit results and applicable WAP-related corrective action report (**CAR**) resolution will be provided to NMED for approval, and will be kept in the WIPP facility operating record until closure of the WIPP facility. The audit report components submitted to NMED and maintained in the operating record may be in hard copy or electronic format.

An initial audit will be performed at each generator/storage site performing waste characterization activities prior to the formal acceptance of the WSPFs and/or any waste characterization data supplied by the generator/storage sites. Audits will be performed at least

annually thereafter, including the possibility of unannounced audits (i.e., not a regularly scheduled audit). These audits will allow NMED to verify that the Permittees have implemented the WAP and that generator/storage sites have implemented a QA program for the characterization of waste and meet applicable WAP requirements. The accuracy of physical waste description and waste stream assignment provided by the generator/storage site will be verified by review of the radiography results, and visual examination of data records and radiography images (as necessary) during audits conducted by the Permittees. More detail on this audit process is provided in Permit Attachment B6.

The Permittees also annually evaluate laboratories and their QA/QC programs as part of their participation in the Permittees' Performance Demonstration Program (**PDP**) laboratory performance program. The Permittees' audits cover the requirements of the lab's QA/QC program, as well as compliance with this WAP. Continued compliance with these parameters will be verified by ongoing audits by the Permittees at the generator/storage sites (Permit Attachment B6). The Permittees' audits of the generator/storage sites will verify that the laboratories analyzing waste have been properly audited by the generator/storage sites.

B-6~~7~~ Records Management

B-6a General Requirements

Waste characterization data and documents related to waste characterization, including data and documents that are part of the WIPP facility operating record, are managed in accordance with the following guidelines:

- Records shall be legible.

- The WIPP facility operating record shall include either hard copies or electronic records. Records that are available electronically need only be produced in hard copy format upon request. Electronic records included in the WIPP facility operating record must be migrated (updated to new hardware and/or software) before the previous electronic media are no longer useable.

- Corrections to manual records shall be made with a single line through the incorrect information, and the date and initial of the person making the correction

shall be added. A justification for changing the original data may also be included. Original data must not be obliterated or otherwise disfigured so as not to be readable. Data changes shall only be made by the individual who originally collected the data or an individual authorized to change the data.

- Corrections to electronic records shall indicate the individual making the change, field changed, reason for the change, and the change made. Data changes shall only be made by the individual who originally collected the data or an individual authorized to change the data.

- Black ink is encouraged, unless a copy test has been conducted to ensure the other color ink will copy.

- Use of highlighters on records is discouraged.

- Records shall be reviewed for completeness.

- Records shall be validated by the cognizant manager or designee.

- All raw data shall be signed and dated in reproducible ink by the person generating it. Alternately, unalterable electronic approvals may be used.

- All data must be recorded clearly, legibly, and accurately in field and laboratory records (bench sheets, logbooks), and include applicable sample identification numbers (for sampling and analytical labs).

- All data must be transferred and reduced from field and laboratory records completely and accurately.

- All field and laboratory records must be maintained as specified in Table B-7.

- Data must be organized into a standard format for reporting purposes, as outlined in specific sampling and analytical procedures.

- All electronic and video data must be stored appropriately to ensure that waste

container data, sample data, and associated QC data are readily retrievable.

- Electronic approvals may be used in lieu of signatures.

- Releases may be either via written or electronic signature or electronic approval.

B-6b WIPP Waste Information System

All generator/storage sites planning to ship TRU mixed waste to WIPP will supply the required data to the WIPP Waste Information System (**WWIS**). Data will be entered into the WWIS in the exact format required by the database. Refer to the *WIPP Waste Information System User's Manual for Use by Shippers/Generators* (DOE, 2001) for the WWIS data fields and format requirements. The Permittees will use the WWIS to verify that all of the supplied data meet the applicable edit and limit checks prior to the shipment of any TRU mixed waste to WIPP. The WWIS automatically will notify the generator/storage site if any of the supplied data fails to meet the requirements of the edit and limit checks via an appropriate error message. The generator/storage site will be required to correct the discrepancy with the waste or the waste data and re-transmit the corrected data prior to acceptance of the data by the WWIS. The Permittees will review data reported for each container of each shipment prior to providing notification to the shipping generator/storage site that the shipment is acceptable. Read-only access to the WWIS will be provided to the NMED. Table B-8 contains a description of data contained in the WWIS that are required as part of this Permit.

The WWIS will generate the following:

- Waste Emplacement Report

This report will be added to the operating record to track the quantities of waste, date of emplacement, and location of authorized containers or container assemblies in the repository. The Permittees will document the specific panel room or drift that an individual waste container is placed in as well as the row/column/height coordinates location of the container or containers assembly. This report will be generated on a weekly basis. Locations of containers or container assemblies will also be placed on a map separate from the WWIS. Reports and maps that are included as part of the operating record will be retained at the WIPP site for the life of the facility.

- Shipment Summary Report

This report will contain the container identifications of every container in the shipment, listed by TRUPACT-II number and by assembly number (for seven packs), for every assembly in the TRUPACT-II. This report is used by the Permittees to verify containers in a shipment and will be generated on a shipment basis.

- Waste Container Data Report

This report will be generated on a waste stream basis and will be used by the Permittees during the WSPF review and approval process. This report will contain the data listed in the Characterization Module. This report will be generated and attached to the WSPF for inclusion in the facility operating record and will be kept for the life of the facility.

- Reports of Change Log

The WWIS must include a Reports of Change Log, which will contain the following items:

- Changed by
- Fields changed
- Reason for the change
- Change made

The Reports of Change Log must be available upon request. This report will provide an auditable trail for the data in the database.

The WWIS shall have data available for export so that the Permittees and NMED can summarize headspace gas concentrations for the open room being loaded. This is required to allow calculations of average room headspace gas concentrations to ensure they do not exceed the limits specified in Table B-2.

Access to the WWIS will be controlled by the Permittees' Data Administrator (**DA**) who will control the WWIS users based on approval from management personnel.

The TRU mixed waste generator/storage sites will only have access to data that they have supplied, and only until the data have been formally accepted by the Permittees. After the data have been accepted, the data will be protected from indiscriminate change and can only be changed by an authorized DA.

The WWIS has a Change Log that requires a reason for the change from the DA prior to accepting the change. The data change information, the user ID of the authorized DA making the change, and the date of the change will be recorded in the data change log automatically. The data change log cannot be revised by any user, including the DA. The data change log will be subject to internal and external audits and will provide an auditable trail for all changes made to previously approved data.

The WWIS Data Dictionary includes all of the data fields, the field format and the limits associated with the data as established by this WAP. These data will be subjected to edit and limit checks that are performed automatically by the database, as defined in the *WIPP Waste Information System User's Manual for Use by Shippers/Generators* (DOE, 2001). (If a container was part of a composite headspace gas sample, the analytical results from the composite sample must be assigned as the container headspace gas data results, including associated TICs.)

The Permittees will coordinate the data transmission with each generator/storage site. Actual data transmission will use appropriate technology to ensure the integrity of the data transmissions. The Permittees will require sites with large waste inventories and large databases to populate a data structure provided by the Permittees that contains the required data dictionary fields that are appropriate for the waste stream (or waste streams) at that site. For example, totals analysis data will not be requested from sites that do not have homogeneous solids or soil/gravel waste. The Permittees will access this data via the DOE Business Network or other secure connection to ensure an efficient transfer of this data. Small quantity sites will be given a similar data structure by the Permittees that is tailored to their types of waste. Sites with very small quantities of waste will be provided with the ability to assemble the data interactively to this data structure on the WWIS.

B-6c Records Storage

Records related to waste characterization activities at the generator/storage sites will be maintained in the testing, sampling, or analytical facility files or generator/storage site project files. Contract laboratories will forward testing, sampling, and analytical records along with Batch Data Reports, to the generator/storage site project office for inclusion in the generator/storage site's project files. Raw data obtained by testing, sampling, and analyzing TRU mixed waste in support of this WAP will be identifiable, legible, and provide documentary evidence of quality.

A records inventory and disposition schedule (**RIDS**) or an equivalent system shall be prepared and approved by generator/storage site personnel. All records relevant to an enforcement action under this Permit, regardless of disposition, shall be maintained at the generator/storage site until NMED determines they are no longer needed for enforcement action, and then dispositioned as specified in the approved RIDS. All waste characterization data and related QA/QC records in the generator/storage site project files for TRU mixed waste to be shipped to the WIPP facility are designated as either Lifetime Records or Non-Permanent Records. Records that are designated as Lifetime Records shall be maintained for the life of the waste characterization program at a participating generator/storage site plus six years, then offered to the Permittees for permanent archival of information of these records in the appropriate form, or transferred to the appropriate Federal Records Center (**FRC**). Waste characterization records designated as Non-Permanent Records shall be maintained for ten years from the date of (record) generation and then dispositioned according to their approved RIDS. If a generator/storage site ceases to operate, all records shall be transferred to the Permittees before closeout. Table B-7 provides a listing of records designated as Lifetime Records and Non-Permanent Records.

At the Permittee level, all waste characterization data for each TRU mixed waste container transmitted to WIPP shall be maintained by the Permittees for the active life of the WIPP facility plus two years. The active life of the WIPP facility is defined as the period from the initial receipt of TRU mixed waste at the facility until NMED receives certification of final closure of the facility. After their active life, the records shall be retired to the FRC and maintained for 30 years. These records will then be offered to the National Archives. However, this disposition requirement does not preclude the inclusion of these records in the permanent marker system

or other requirements for institutional control.

At the Permittee Level, active records shall be stored when not in use; quality records shall be kept in a one-hour (certified) fire-rated container or a copy of the record shall be stored separately (sufficiently remote from the original) in order to prevent destruction of both copies as a result of a single event such as fire or natural disaster; and unauthorized access to the records shall be controlled by locking the storage container or controlling personnel access to the storage area.

The following records will be maintained for waste characterization purposes as part of the WIPP facility operating record and will be identified on the appropriate RIDS (these records may be maintained in hard copy or electronic format):

- Completed WSPFs and accompanying Characterization Information Summary, including individual container data as transferred on the WWIS (or received as hard-copy)

- Completed Waste Receipt Checklists and discrepancy-related documentation as specified in Permit Attachment B3 Section B3-12c

- WWIS Waste Emplacement Report as specified in Section B-7b

- Audit reports and corrective action reports from the Permittees' Audit and Surveillance Program audits as specified in Section B-6 and Permit Attachment B6

~~B-4a(2) Quality Assurance Objectives~~

~~The generator/storage sites shall demonstrate compliance with each QAO associated with the various characterization methods as presented in Permit Attachment B3. Generator/Storage Site Project Managers are further required to perform a reconciliation at the project level of the data sets submitted by the various organizations at the generator/storage site with the DQOs established in this WAP. The Generator/Storage Site Project Manager shall conclude that all of the DQOs have been met for the characterization of the waste stream prior to submitting a WSPF to the Permittees for approval (Permit Attachment B3). The following QAO elements~~

shall be considered for each technique, as a minimum:

- Precision
  - Precision is a measure of the mutual agreement among multiple measurements.
- Accuracy
  - Accuracy is the degree of agreement between a measurement result and the true or known value.
- Completeness
  - Completeness is a measure of the amount of valid data obtained from a method compared to the total amount of data obtained that is expressed as a percentage.
- Comparability
  - Comparability is the degree to which one data set can be compared to another.

A more detailed discussion of the QAOs, including a mathematical representation, where appropriate, can be found in Permit Attachment B3, which describes the QAOs associated with each method of sampling and analysis.

B-4a(3) Sample Control

The generator/storage sites will implement a sample handling and control program that will include the maintenance of field documentation records, proper labeling, and a chain of custody (**COC**) record. The generator/storage site Quality Assurance Project Plan (**QAPjP**) or procedures referenced in the QAPjP will document this program and include COC forms to control the sample from the point of origin to the final analysis result reporting. The Permittees

will review and approve the QAPjP, including their determination that the sample control program is adequate. The approved QAPjP will be provided to NMED prior to shipment of TRU mixed waste and before the generator/storage site audit, as specified in Permit Attachment B5. Details of this sample control program are provided in Permit Attachment B1 and are summarized below to include:

- Field Documentation of samples including: point of origin, date of sample, container ID, sample type, analysis requested, and COC number.

- Labeling and/or tagging including: sample numbering, sample ID, sample date, sampling conditions, and analysis requested.

- COC control including: name of sample relinquisher, sample receiver, and the date and time of the sample transfer.

- Proper sample handling and preservation.

B-4a(4) Data Generation

Batch Data Reports, in a format approved by the Permittees, will be used by each generator/storage site for reporting waste characterization data. This format will be included in the generator/storage site QAPjP, controlled electronic databases, or procedures referenced in the QAPjP (Permit Attachment B5) and will include all of the elements required by this WAP for Batch Data Reports (Permit Attachment B3).

The Permittees shall perform audits of the generator/storage site waste characterization programs, as implemented by the generator/storage site QAPjP, to verify compliance with the WAP, and the DQOs in this WAP, (See Permit Attachment B6 for a discussion of the content of the audit program). The primary functions of these audits are to review generator/storage sites' adherence to the requirements of this WAP and assure adherence to the WAP characterization program . The Permittees shall provide the results of each audit to NMED. If audit results indicate that a generator/storage site is not in compliance with the requirements of this WAP, the Permittees will take appropriate action (Permit Attachment B6).

~~The Permittees shall further require all analytical laboratories analyzing WIPP waste characterization samples for the generator/storage sites to have established, documented QA/QC programs. The Permittees annually evaluate these laboratories and their QA/QC programs as part of their participation in the Permittees' Performance Demonstration Program (**PDP**) laboratory performance program. The Permittees' audits cover the requirements of the lab's QA/QC program, as well as compliance with this WAP. Continued compliance with these parameters will be verified by ongoing audits by the Permittees at the generator/storage sites as specified in Permit Attachment B6. The Permittees' audits of the generator/storage sites will verify that the laboratories analyzing waste have been properly audited by the generator/storage sites. The laboratory's QA/QC program shall include the following:~~

- ~~Facility organization~~
- ~~A list of equipment/instrumentation~~
- ~~Operating procedures~~
- ~~Laboratory QA/QC procedures~~
- ~~Quality assurance review~~
- ~~Laboratory records management~~

~~B-4a(5)~~ ~~Data Verification~~

~~Batch Data Reports will document the testing, sampling, and analytical results from the required characterization activities, and document required QA/QC activities . Data validation and verification at both the data-generation level and the project level will be performed as required by this Permit before the required data are transmitted to the Permittees (Permit Attachment B3). NMED may request, through the Permittees, copies of any Batch Data Report, and/or the raw data validated by the generator/storage sites, to check the Permittees' audit of the validation and verification process.~~

B-4a(6) Data Transmittal

Batch Data Reports will include the information required by Section B3-10 and will be transmitted by hard copy or electronically (provided a hard copy is available on demand) from the data generation level to the project level.

The generator/storage site will transmit waste container information electronically via the WIPP Waste Information System (**WWIS**). Data will be entered into the WWIS in the exact format required by the database. Refer Section B-4b for WWIS reporting requirements and the *WIPP Waste Information System User's Manual for Use by Shippers/Generators* (DOE, 2001) for the WWIS data fields and format requirements.

Once a waste stream is fully characterized, the Site Project Manager will also submit to the Permittees a WSPF (Figure B-1) accompanied by the Characterization Information Summary for that waste stream which includes reconciliation with DQOs (Section B3-12b(1)). The WSPF, the Characterization Information Summary, and information from the WWIS will be used as the basis for acceptance of waste characterization information on TRU mixed wastes to be disposed of at the WIPP.

B-4a(7) Records Management

Records related to waste characterization activities at the generator/storage sites will be maintained in the testing, sampling, or analytical facility files or generator/storage site project files. Contract laboratories will forward testing, sampling, and analytical records along with Batch Data Reports, to the generator/storage site project office for inclusion in the generator/storage site's project files. Raw data obtained by testing, sampling, and analyzing TRU mixed waste in support of this WAP will be identifiable, legible, and provide documentary evidence of quality.

Records inventory and disposition schedule (**RIDS**) or an equivalent system shall be prepared and approved by generator/storage site personnel. All records relevant to an enforcement action under this Permit, regardless of disposition, shall be maintained at the generator/storage site until NMED determines they are no longer needed for enforcement action, and then dispositioned as specified in the approved RIDS. All waste characterization data and related

QA/QC records in the generator/storage site project files for TRU mixed waste to be shipped to the WIPP facility are designated as either Lifetime Records or Non-Permanent Records. Records that are designated as Lifetime Records shall be maintained for the life of the waste characterization program at a participating generator/storage site plus six years, then offered to the Permittees for permanent archival of information of these records in the appropriate form, or transferred to the appropriate Federal Records Center (**FRC**). Waste characterization records designated as Non-Permanent Records shall be maintained for ten years from the date of (record) generation and then dispositioned according to their approved RIDS. If a generator/storage site ceases to operate, all records shall be transferred before closeout. Table B-7 provides a listing of records designated as Lifetime Records and Non-Permanent Records.

At the Permittee level, all waste characterization data for each TRU mixed waste container transmitted to WIPP shall be maintained by the Permittees for the active life of the WIPP facility plus two years. The active life of the WIPP facility is defined as the period from the initial receipt of TRU mixed waste at the facility until NMED receives certification of final closure of the facility. After their active life, the records shall be retired to the FRC and maintained for 30 years. These records will then be offered to the National Archives. However, this disposition requirement does not preclude the inclusion of these records in the permanent marker system or other requirements for institutional control.

B-4b Permittee Level : Waste Screening and Verification of TRU Mixed Waste

Permittee waste screening is a two-phased process. Phase I will occur prior to transporting the TRU mixed waste to the WIPP facility. Phase II will occur after the TRU mixed waste shipment arrives but before it is emplaced. Figure B-5 presents the waste shipment screening process.

B-4b(1) Phase I Waste Stream Screening and Verification

The first phase of the waste screening and verification process will occur before TRU mixed waste is shipped to the WIPP facility. Before the Permittees begin the process of accepting TRU mixed waste from a generator/storage site, an initial audit of that generator/storage site will be conducted as part of the Permittees' Audit and Surveillance Program (Permit Attachment B6). The RCRA portion of the generator/storage site audit program will provide on-site verification of characterization procedures; Batch Data Report preparation; and recordkeeping

to ensure that all applicable provisions of the WAP requirements are met. Another portion of the Phase I verification is the WSPF approval process. At the WIPP facility, this process includes verification that all of the required elements of a WSPF and the Characterization Information Summary are present (Permit Attachment B3) and that the waste characterization information meet acceptance criteria required for compliance with the WAP (Section B3-12b(1)).

Once a generator/storage site has prepared a QAPjP which includes applicable WAP requirements, it is submitted to the Permittees for review and approval (Permit Attachment B5). Once approved, a copy of the QAPjP is provided to NMED for examination. The generator/storage site will implement the specific parameters of the QAPjP after it is approved. The initial generator/storage site RCRA audit will be performed at some point after this implementation has taken place, but prior to shipment of TRU mixed waste from that generator/storage site to WIPP. Additional audits, focusing on the results of waste characterization, will be performed at least annually. The Permittees have the right to conduct unannounced audits and to examine any records that are related to the scope of the audit.

When the required waste stream characterization data have been collected by a generator/storage site and the initial generator/storage site audit has been successfully completed, the generator/storage Site Project Manager will verify that a waste stream characterization meets the applicable WAP requirements as a part of the project level verification (Section B3-10b). If the waste characterization does not meet the applicable requirements of the WAP, the mixed waste stream cannot be managed, stored, or disposed at WIPP until those requirements are met. The Site Project Manager will then complete a WSPF and submit it to the Permittees, along with the accompanying Characterization Information Summary for that waste stream (Section B3-12b(1)). All data necessary to check the accuracy of the WSPF will be transmitted to the Permittees for verification. This provides notification that the generator/storage site considers that the waste stream (identified by the waste stream identification number) has been adequately characterized for disposal prior to shipment to WIPP. The Permittees will compare headspace gas, radiographic, visual examination and solid sampling/analysis data obtained subsequent to submittal and approval of the WSPF (and prior to submittal) with characterization information presented on this form. If the Permittees determine (through the data comparison) that the characterization information is adequate, the WSPF will be approved. Prior to the first shipment of containers from the approved waste stream, the approved WSPF and accompanying Characterization Information Summary will be provided to NMED. If the data comparison indicates that analyzed containers have hazardous

wastes not present on the WSPF, or a different Waste Matrix Code applies, the WSPF is in error and shall be resubmitted. Ongoing WSPF examination is discussed in detail in Section B-4b(1)(ii).

As part of the waste characterization data submittal, the generator/storage site will also transmit the data on a container basis via the WWIS. This data submittal can occur at any time as the data are being collected, but will be complete for each container prior to shipment of that container. The WWIS will conduct internal edit/limit checks as the data are enetered, and the data will be available to the Permittees for review as supporting information for WSPF review. NMED will have read-only access to the WWIS as necessary to determine compliance with the WAP. The initial WSPF check performed by the Permittees will include WWIS data and the Characterization Summary. The Permittees will compare ongoing sampling/analysis characterization data obtained and submitted via the WWIS to the approved WSPF. If this comparison shows that containers have hazardous wastes not reported on the WSPF, or a different Waste Matrix Code applies, the data are rejected and the waste containers are not accepted for shipment.

If discrepancies arise as a result of the Phase I review, the generator/storage sites will be contacted by the Permittees and required to provide the necessary additional information to resolve the discrepancy before that waste stream is approved for disposal at the WIPP facility. If the discrepancy is not resolved, the waste stream will not be approved. The Permittees will notify NMED in writing of any discrepancies identified during WSPF review and the resulting discrepancy resolution prior to waste disposal. The Permittees will not manage, store, or dispose the waste stream until this discrepancy is resolved in accordance with this WAP.

B-4b(1)(i) WWIS Description

All generator/storage sites planning to ship TRU mixed waste to WIPP will supply the required data to the WWIS. The Permittees will use the WWIS to verify that all of the supplied data meet the edit and limit checks prior to the shipment of any TRU mixed waste to WIPP. The WWIS automatically will notify the generator/storage site if any of the supplied data fails to meet the requirements of the edit and limit checks via an appropriate error message. The generator/storage site will be required to correct the discrepancy with the waste or the waste data and re-transmit the corrected data prior to acceptance of the data by the WWIS. The Permittees will review data reported for each container of each shipment prior to providing

notification to the shipping generator/storage site that the shipment is acceptable. Read-only access to the WWIS will be provided to the NMED. Table B-8 contains a listing of the data fields contained in the WWIS that are required as part of this Permit.

The WWIS will generate the following:

- Waste Emplacement Report

This report will be added to the operating record to track the quantities of waste, date of emplacement, and location of authorized containers or container assemblies in the repository. The Permittees will document the specific panel room or drift that an individual waste container is placed in as well as the row/column/height coordinates location of the container or containers assembly. This report will be generated on a weekly basis. Locations of containers or container assemblies will also be placed on a map separate from the WWIS. Reports and maps that are included as part of the operating record will be retained at the WIPP site, for the life of the facility.

- Shipment Summary Report

This report will contain the container IDs of every container in the shipment, listed by TRUPACT-II number and by assembly number (for seven packs), for every assembly in the TRUPACT-II. This report is used by the Permittees to verify containers in a shipment and will be generated on a shipment basis.

- Waste Container Data Report

This report will be generated on a waste stream basis and will be used by the Permittees during the WSPF review and approval process. This report will contain the data listed in the Characterization Module on Table B-8. This report will be generated and attached to the WSPF for inclusion in the facility operating record and will be kept for the life of the facility.

- ~~Reports of Change Log~~

~~This will consist of a short report that lists the user ID and the fields changed. The report will also include a reason for the change. A longer report will list the information provided on the short report and include a before and after image of the record for each change, a before-record for each deletion, and the new information for added records. These reports will provide an auditable trail for the data in the database.~~

~~The WWIS shall have data available for export so that the Permittees and NMED can summarize headspace gas concentrations for the open room being loaded. This is required to allow calculations of average room headspace gas concentrations to ensure they do not exceed the limits specified in Table B-2.~~

~~Access to the WWIS will be controlled by the Permittees' Data Administrator (**DA**) who will control the WWIS users based on approval from management personnel.~~

~~The TRU mixed waste generator/storage sites will only have access to data that they have supplied, and only until the data have been formally accepted by the Permittees. After the data have been accepted, the data will be protected from indiscriminate change and can only be changed by a authorized DA.~~

~~The WWIS has a Change Log that requires a reason for the change from the DA prior to accepting the change. The data change information, the user ID of the authorized DA making the change, and the date of the change will be recorded in the data change log automatically. The data change log cannot be revised by any user, including the DA. The data change log will be subject to internal and external audits and will provide an auditable trail for all changes made to previously approved data.~~

~~B-4b(1)(ii) Examination of the Waste Stream Profile Form and Container Data Checks~~

~~The Permittees will be responsible for the verification of completeness and accuracy of the Waste Stream Profile Form (Section B3-12b(1)). The assignment of the waste stream description, Waste Matrix Code Group, and Summary Category Groups; the results of waste analyses; the acceptable knowledge summary documentation; the methods used for~~

characterization; the Carlsbad Field Office (**CBFO**) certification, and appropriate designation of EPA hazardous waste code(s) will be examined. If the WSPF is inaccurate, efforts will be made to resolve discrepancies by contacting the generator/storage site. If discrepancies in the waste stream are detected at the generator/storage site, the generator/storage site will implement a non-conformance program to identify, document, and report discrepancies (Permit Attachment B3).

The WSPF shall pass all verification checks by the Permittees in order for the waste stream to be approved for shipment to the WIPP facility. The WSPF check against waste container data will occur during the initial WSPF approval process (Section B-4b(1)).

The EPA hazardous waste codes for the wastes that appear on the Waste Stream Profile Form will be compared to those in the Permittees' RCRA Part A Permit Application (Section XIV of Permit Attachment O) to ensure that only wastes that contain constituents listed in Section XIV are approved for management, storage, or disposal at WIPP. Some of the waste may also be identified by unique state hazardous waste codes. These wastes are acceptable at WIPP as long as the TSDF-WAC are met. The Characterization Information Summary will be reviewed by the Permittees to verify that the waste has been classified correctly with respect to the assigned EPA hazardous waste codes. The analytical method used will be compared to those listed in Tables B-3, B-4, and B-5 to assure that only approved analytical methods were used for analysis of the waste. The Permittees will verify that TSDF-WAC compliance has been met by the generator/storage site.

Waste data transferred via the WWIS after WSPF approval will be compared with the approved WSPF. Any container with a hazardous waste stream description different from its WSPF will not be managed, stored, or disposed at WIPP.

The Permittees will also verify that three different types of data specified below are available for every container holding TRU mixed waste before that waste is managed, stored, or disposed at WIPP. The following three verifications will be performed on data from the following determinations: 1) an assignment of the waste stream's waste description (by Waste Matrix Codes) and Waste Matrix Code Group; 2) a determination of ignitability, reactivity, and corrosivity; and 3) a determination of compatibility. The verification of waste stream description will be performed by reviewing the WWIS for consistency in the waste stream description and

WSPF. The Characterization Information Summary will indicate if the waste has been checked for the characteristics of ignitability, corrosivity, and reactivity. The final verification of waste compatibility will be performed using Appendix C1 of the WIPP RCRA Part B Permit Application (DOE, 1997), the compatibility study.

B-4b(1)(iii) Permittees' Audit and Surveillance Program

An important part of the Permittees' verification process is the Permittees' Audit and Surveillance Program. The focus of this audit program is compliance with this WAP and the Permit.. This audit program addresses all waste sampling and analysis activities, from waste stream classification assignment through final loading of the TRUPACT-II, and ensures compliance with SOPs and the WAP. Audits will assure that containers and their associated documentation are adequately tracked throughout the waste handling process. Operator qualifications will be verified, and QA/QC procedures will be surveyed. A final report that includes generator/storage site audit results and applicable WAP-related corrective action report (**CAR**) resolution will be provided to NMED for approval, and will be kept in the WIPP facility operating record until closure of the WIPP facility.

An initial audit will be performed at each generator/storage site performing waste characterization activities prior to the formal acceptance of the WSPF and/or any waste characterization data supplied by the generator/storage sites. Audits will be performed at least annually thereafter, including the possibility of unannounced audits (i.e., not a regularly scheduled audit). These audits will allow NMED to verify that the Permittees have implemented the WAP and that generator/storage sites have implemented a QA program for the characterization of waste and meet applicable WAP requirements. The accuracy of physical waste description and waste stream assignment provided by the generator/storage site will be verified by review of the radiography results, and visual examination of data records and radiography images (as necessary) during audits conducted by the Permittees. More detail on this audit process is provided in Permit Attachment B6.

B-4b(2) Phase II Waste Shipment Screening and Verification

Phase II of the waste shipment screening and verification process includes examination of a waste shipment after the waste shipment has arrived. The Phase-II determinations are: 1) a

~~determination of the completeness and accuracy of the EPA Hazardous Waste Manifest; 2) a determination of waste shipment completeness; 3) a determination of land disposal restriction notice completeness; and 4) an identification and resolution of waste shipment irregularities. Only those waste containers that pass all Phase II waste screening determinations will be emplaced at WIPP. For each container shipped, the Permittees shall ensure that the generator/storage sites provide the following information:~~

~~Hazardous Waste Manifest Information:~~

- ~~Generator/storage site name and EPA ID~~
- ~~Generator/storage site contact name and phone number~~
- ~~Quantity of waste~~
- ~~List of the hazardous waste codes in the shipment~~
- ~~Listing of all shipping container IDs (TRUPACT-II serial number)~~
- ~~Signature of authorized generator representative~~

~~Specific Waste Container information:~~

- ~~Waste Stream Identification Number~~
- ~~List of Hazardous Codes per Container~~
- ~~Certification Data~~
- ~~Shipping Data (Assembly numbers, ship date, shipping category, etc.)~~

~~This information shall also be supplied electronically to the WWIS. The container-specific information will be supplied electronically as part of the Level 3 Phase I Screening, and shall be supplied prior to the Permittees' management, storage, or disposal of the waste.~~

The Permittees will verify each approved shipment upon receipt at WIPP against the data on the WWIS shipment summary report to ensure containers have the required information. A Waste Receipt Checklist will be used to document the verification.

B-4b(2)(I) Examination of the EPA Uniform Hazardous Waste Manifest and Associated Waste Tracking Information

Upon receipt of a TRU mixed waste shipment, the Permittees will make a determination of EPA Uniform Hazardous Waste Manifest completeness and sign the manifest to allow the driver to depart. The Permittees will then make a determination of waste shipment completeness by checking the unique, bar-coded identification number found on each container holding TRU mixed waste against the WWIS database after opening the TRUPACT-II.

The WWIS links the bar-coded identification numbers of all containers in a specific waste shipment to the waste assembly (for 7-packs) and to the shipment identification number, which is also written on the EPA Hazardous Waste Manifest. Generators electronically transmit the waste shipment information to the WWIS before the TRU mixed waste shipment is transported. Once a TRU mixed waste shipment arrives, the Permittees verify the identity of each container using the data already in the WWIS.

The WWIS will maintain waste container receipt and emplacement information provided by the Permittees. It will include, among other items, the following information associated with each container of TRU mixed waste:

- TRUPACT-II inner containment vessel closure date
- Package (container) receipt date
- Overpack identification number (if appropriate)
- Package (container) emplacement date
- Package (container) emplacement location

The WWIS links the bar-coded identification numbers of all containers in a specific TRU mixed waste shipment to the waste assembly (for 7-packs) and to the shipment identification number, which is also written on the EPA Hazardous Waste Manifest. Generators electronically transmit the waste shipment information to the WWIS before the TRU mixed waste shipment is transported. Once a TRU mixed waste shipment arrives, the Permittees verify the identity of

each container (or one container in a bound 7-pack) using the data already in the WWIS.

Discrepancies will be identified during manifest examination and container bar-code WWIS data comparison. A manifest discrepancy is a difference between the quantity or type of hazardous waste designated on the manifest and the quantity or type of hazardous waste the WIPP facility actually receives. The generator/storage site technical contact (as listed on the manifest) will be contacted to resolve the discrepancy. If the discrepancy is identified prior to the containers being removed from the TRUPACT-II, the waste will be retained in the parking area. If the discrepancy is identified after the waste containers are removed from the TRUPACT-II, the waste will be retained in the Waste Handling Building (**WHB**) until the discrepancy is resolved. Errors on the manifest can be corrected by the WIPP facility with a verbal (followed by a mandatory written) concurrence by the generator/storage site technical contact. All discrepancies that are unresolved within fifteen (15) days of receiving the waste will be immediately reported to the NMED in writing. Notifications to the NMED will consist of a letter describing the discrepancies, discrepancy resolution, and a copy of the manifest. If the manifest discrepancies have not been resolved within thirty (30) days of waste receipt, the shipment will be returned to the generator/storage facility. If it becomes necessary to return waste containers to the generator/storage site, a new EPA Uniform Hazardous Waste Manifest may be prepared by the Permittees.

Documentation of the returned containers will be recorded in the WWIS. Changes will be made to the WWIS data to indicate the current status of the container(s) The reason for the WWIS data change and the record of the WWIS data change will be maintained in the change log of the WWIS, which will provide an auditable record of the returned shipment.

The Permittees will be responsible for the resolution of discrepancies, notification of the NMED, as well as returning the original copy of the manifest to the generator/storage site.

B-4b(2)(ii) Examination of the Land Disposal Restriction (**LDR**) Notice

TRU mixed waste is exempt from the LDRs by the Land Withdrawal Act Amendment (Public Law 104-201). This amendment states that WIPP "Waste is exempted from treatment standards promulgated pursuant to section 3004(m) of the Solid Waste Disposal Act (42 U.S. C. 6924(m)) and shall not be subjected to the Land Disposal prohibitions in section 3004(d), (e),

~~(f), and (g) of the Solid Waste Disposal Act." Therefore, with the initial shipment of a TRU mixed waste stream, the generator shall provide the Permittees with a one time written notice. The notice must include the information listed below:~~

~~Land Disposal Restriction Notice Information:~~

- ~~EPA Hazardous Waste Number(s) and Manifest Numbers of first shipment of a mixed waste stream~~
- ~~Statement: this waste is not prohibited from land disposal~~
- ~~Date the waste is subject to prohibition~~

~~This information is the applicable information taken from column "268.7(a)(4)" of the "Generator Paperwork Requirements Table" in 20.4.1.800 NMAC (incorporating 40 CFR 268.7(a)(4)). Note that item "5" from the "Generator Paperwork Requirements Table" is not applicable since waste analysis data are provided electronically via the WWIS and item "7" is not applicable since WIPP is exempted from the treatment standards.~~

~~The Permittees will review the LDR notice for accuracy and completeness. The generator will prepare this notice in accordance with the applicable requirements of 20.4.1.800 NMAC (incorporating 40 CFR §268.7(a)(4)).~~

~~B-4b(2)(iii)~~ Verification

~~The Permittees will make a determination of TRU mixed waste shipment irregularities. The following items will be inspected for each TRU mixed waste shipment arriving at the WIPP facility:~~

- ~~Whether the number and type of containers holding TRU mixed waste match the information in the WWIS~~
- ~~Whether there are any container defects~~

~~The Permittees will verify that the containers (as identified by their container ID numbers) are the containers for which accepted data already exists in the WWIS. A check will be performed by the Permittees comparing the data on the WWIS Shipment Summary Report for the shipment to the actual shipping papers (including the EPA Hazardous Waste Manifest). This check also verifies that the containers included in the shipment are those for which approved shipping data already exist in the WWIS Transportation Data Module (Table B-8). For standard waste boxes (**SWBs**) and ten drum overpacks (**TDOPs**), this check will include comparing the barcode on the container with the container number on the shipping papers and the data on the WWIS Shipment Summary Report. For 7-pack assemblies, one of the seven container barcodes will be read by the barcode reader and compared to the assembly information for this container on the WWIS Shipment Summary Report. This will automatically identify the remaining six containers in the assembly. This process enables the Permittees to identify all of the containers in the assembly with minimum exposure. If all of the container IDs and the information on the shipping papers agree with the WWIS Shipment Summary Report, the containers will be approved for disposal at the WIPP facility.~~

~~B-4b(2)(iv)~~ ~~Waste Shipment Screening QA/QC~~

~~Waste shipment screening QA/QC ensures that TRU mixed waste received is that which has been approved for shipment during the Phase I screening. This is accomplished by maintaining QA/QC control of the waste shipment screening process. The screening process will be controlled by administrative processes which will generate records documenting waste receipt that will become part of the waste receipt record. The waste receipt record documents that container identifications correspond to shipping information and approved TRU mixed waste streams. The Permittees will extend QA/QC practices to the management of all records associated with waste shipment screening determinations.~~

~~B-4b(2)(v)~~ ~~Records Management and Reporting~~

~~As part of the WIPP facility's operating record, data and documents associated with waste characterization data are managed in accordance with standard records management practices. The storage of the Permittees' copy of the manifest, LDR information, waste characterization data, WSPF, and other related records will be identified on the appropriate records inventory and disposition schedule.~~

~~Waste characterization data and documents related to waste characterization that are part of the WIPP facility operating record are managed in accordance with the following guidelines:~~

~~B-4b(2)(vi)~~ ~~General Requirements~~

- ~~Records shall be legible~~
- ~~Corrections shall be made with a single line through the incorrect information, and the date and initial of the person making the correction shall be added~~
- ~~Black ink is encouraged, unless a copy test has been conducted to ensure the other color ink will copy~~
- ~~Use of highlighters on records is discouraged~~
- ~~Records shall be reviewed for completeness~~
- ~~Records shall be validated by the cognizant manager or designee~~

~~B-4b(2)(vii)~~ ~~Records Storage~~

- ~~Active records shall be stored when not in use~~
- ~~Quality records shall be kept in a one-hour (certified) fire-rated container or a copy of a record shall be stored separately (sufficiently remote from the original) in order to prevent destruction of both copies as a result of a single event such as fire or natural disaster~~
- ~~Unauthorized access to the records is controlled by locking the storage container or controlling personnel access to the storage area~~

~~The following records will be maintained for waste characterization purposes as part of the WIPP facility operating record:~~

- ~~Completed WIPP WSPFs and accompanying Characterization Information Summary, including individual container data as transferred on the WWIS (or received as hard-copy) and any discrepancy-related documentation as specified in Section B-4b(1)~~

- ~~Completed Waste Receipt Checklists and discrepancy-related documentation as specified in Section B-4b(2)~~

- ~~WIPP WWIS Waste Emplacement Report as specified in Section B-4b(1)(I)~~

- ~~Audit reports and corrective action reports from the Permittees' Audit and Surveillance Program audits as specified in Section B-4b(1)(iii) and Permit Attachment B6~~

~~These records will be maintained for each TRU mixed waste container managed at the WIPP facility.~~

~~B-4b(2)(viii)~~ Reporting

~~The Permittees will provide a biennial report in accordance with 20.4.1.500 NMAC (incorporating 40 CFR §264.75) to NMED that includes information on actual volume and waste descriptions received for disposal during the time period covered by the report.~~

B-7~~5~~ List of References

~~U.S. Department of Energy (DOE), 1995c, "Performance Demonstration Program Plan for the Analysis of Simulated Headspace Gases for the TRU Waste Characterization Program,"~~ CAO-95-1076~~, Current Revision, Carlsbad, New Mexico, Carlsbad Field Office, U.S. Department of Energy.~~

~~U.S. Department of Energy (DOE), 1995d, "Performance Demonstration Program Plans for Analysis of Solid Waste Forms,"~~ CAO-95-1077~~, Current Revision, Carlsbad, New Mexico, Carlsbad Field Office, U.S. Department of Energy.~~

~~U.S. Department of Energy (~~DOE~~)~~, 1997, Resource Conservation and Recovery Act Part B Permit Application for the Waste Isolation Pilot Plant~~"~~, Revision 6.5, U.S. Department of Energy.

~~U.S. Department of Energy (~~DOE~~)~~, 2001, "WIPP Waste Information System User's Manual for Use by Shippers/Generators", DOE/CAO 97-2273, U.S. Department of Energy.

U.S. Environmental Protection Agency (EPA), April 1994. "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, a Guidance Manual,"

OSWER 9938.4-03, Office of Solid Waste and Emergency Response, Washington, D.C.

U.S. Environmental Protection Agency (EPA), April 1980. "A Method for Determining the Compatibility of Hazardous Wastes," EPA-600/2-80-076, California Department of Health Services and the U.S. Environmental Protection Agency, Office of Research and Development.

U.S. Environmental Protection Agency (EPA), 1996. "Test Methods for Evaluating Solid Waste," Laboratory Manual Physical/Chemical Methods, SW-846, 3rd ed., U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

TABLES

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TABLE B-1
SUMMARY OF HAZARDOUS WASTE CHARACTERIZATION REQUIREMENTS FOR TRANSURANIC MIXED WASTE [a]

Parameter	Techniques and Procedure
Physical Waste Form Summary Category Names S3000 Homogeneous Solid S4000 Soil/Gravel S5000 Debris Wastes	**Waste Inspection Procedures** Radiography Visual Examination (Permit Attachment B1-3)
Headspace Gases **Volatile Organic Compounds** Benzene Bromoform Carbon tetrachloride Chlorobenzene Chloroform 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethylene (cis)-1,2-Dichloroethylene (trans)-1,2-Dicholoethylene Ethyl benzene Ethyl ether Formaldehyde[b] Hydrazine[c] Methylene chloride 1,1,2,2-Tetrachloroethane Tetrachloroethylene Toluene 1,1,1-Trichloroethane Trichloroethylene 1,1,2-Trichloro-1,2,2-trifluoroethane Xylenes Alcohols and Ketones Acetone Butanol Methanol Methyl ethyl ketone Methyl isobutyl ketone	**Gas Analysis** Gas Chromatography /Mass Spectroscopy (GC/MS), EPA TO-14 or modified SW-846 Methods 8240/8260 (Permit Attachment B3) GC/Flame Ionization Detector (FID), for alcohols and ketones, SW-846 Method 8015 (Permit Attachment B3) Fourier Transform Infrared Spectroscopy (FTIRS), SW-846
Total Volatile Organic Compounds Acetone Benzene Bromoform Butanol Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroform 1,4-Dichlorobenzene[d] 1,2-Dichlorobenzene[d] 1,2-Dichloroethane 1,1-Dichloroethylene Ethyl benzene Ethyl ether Formaldehyde[b] Hydrazine[c] Isobutanol Methanol Methyl ethyl ketone Methylene chloride Pyridine[d] 1,1,2,2-Tetrachloroethane Tetrachloroethylene Toluene 1,1,2-Trichloro-1,2,2-trifluoroethane Trichlorofluoromethane 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethylene Vinyl chloride Xylenes	**Total Volatile Organic Compound Analysis** TCLP, SW-846 Method 1311 GC/MS, SW-846 Method 8260 or Method 8240 GC/FID, SW-846 Method 8015 (Permit Attachment B3) Acceptable Knowledge for Summary Category S5000 (Debris Wastes)

TABLE B-1
SUMMARY OF HAZARDOUS WASTE CHARACTERIZATION REQUIREMENTS FOR TRANSURANIC MIXED WASTE [a]

Parameter	Techniques and Procedure
Total Semivolatile Organic Compounds Cresols 1,4-Dichlorobenzene[e] 1,2-Dichlorobenzene[e] 2,4-Dinitrophenol 2,4-Dinitrotoluene Hexachlorobenzene Hexachloroethane Nitrobenzene Polychlorinated biphenyls Pentachlorophenol Pyridine[e]	**Total Semivolatile Organic Compound Analysis** TCLP, SW-846 Method 1311 GC/MS, SW-846 Method 8250 or Method 8270 GC/ECD for PCBs , SW-846 Method 8082 (Permit Attachment B3) Acceptable Knowledge for Summary Category S5000 (Debris Wastes)
Total Metals Antimony Mercury Arsenic Nickel Barium Selenium Beryllium Silver Cadmium Thallium Chromium Vanadium Lead Zinc	**Total Metals Analysis** TCLP, SW-846 Method 1311 ICP- MS, SW-846 Method 6020 , ICP Emission Spectroscopy, SW-846 Method 6010 Atomic Absorption Spectroscopy , SW-846 Method 7000 (Permit Attachment B3) Acceptable Knowledge for Summary Category S5000 (Debris Wastes)

[a] Permit Attachment B
[b] Required only for homogeneous solids and soil/gravel from Los Alamos National Laboratory and Savannah River Site.
[c] Required only for homogeneous solids and soil/gravel from Oak Ridge National Laboratory and Savannah River Site.
[d] Can also be analyzed as a semi-volatile organic compound.
[e] Can also be analyzed as a volatile organic compound.

TABLE B-2
MAXIMUM ALLOWABLE VOC ROOM-AVERAGED HEADSPACE CONCENTRATION LIMITS (PPMV)

COMPOUND	VOC HEADSPACE CONCENTRATION LIMITS[a] (PPMV)
Carbon Tetrachloride	9625
Chlorobenzene	13000
Chloroform	9930
1,1-Dichloroethene	5490
1,2-Dichloroethane	2400
Methylene Chloride	100000
1,1,2,2-Tetrachloroethane	2960
Toluene	11000
1,1,1-Trichloroethane	33700

[a] There are no headspace limits for other VOCs.

TABLE B-3
HEADSPACE TARGET ANALYTE LIST AND METHODS

Parameter	EPA Specified Analytical Method
Benzene Bromoform Carbon tetrachloride Chlorobenzene Chloroform 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethylene (cis)-1,2-Dichloroethylene (trans)-1,2-Dichloroethylene Ethyl benzene Ethyl ether Formaldehyde[b] Hydrazine[c] Methylene chloride 1,1,2,2-Tetrachloroethane Tetrachloroethylene Toluene 1,1,1-Trichloroethane Trichloroethylene 1,1,2-Trichloro-1,2,2-trifluoroethane Xylenes	EPA: Modified TO-14[a]; Modified SW-846 Method 8240/8260 EPA - Approved FTIRS
Acetone Butanol Methanol Methyl ethyl ketone Methyl isobutyl ketone	EPA: Modified TO-14[a,e]; Modified SW-846 Method 8240/8260 Method 8015 EPA - Approved FTIRS

[a] U.S. Environmental Protection Agency (EPA), 1988, "Compendium Method TO-14, the Determination of Volatile Organic Compounds (VOC) in Ambient Air Using SUMMA® Passivated Canister Sampling and Gas Chromatographic Analysis," in Compendium of Methods for the Determination of Toxic Organic Compounds on Ambient Air. Research Triangle Park, North Carolina, Quality Assurance Division, Monitoring System Laboratory, U.S. EPA. The most current revision of the specified methods may be used.

[b] Required only for containers of homogeneous solids and soil/gravel waste from Los Alamos National Laboratory and Savannah River Site.

[c] Required only for containers of homogeneous solids and soil/gravel waste from Oak Ridge National Laboratory and the Savannah River Site.

TABLE B-4
REQUIRED ORGANIC ANALYSES AND TEST METHODS
ORGANIZED BY ORGANIC ANALYTICAL GROUPS

Organic Analytical Group	Required Organic Analyses	EPA Specified Analytical Method[a,e]
Nonhalogenated Volatile Organic Compounds (VOCs)	Acetone Benzene n-Butanol Carbon disulfide Ethyl benzene Ethyl ether Formaldehyde Hydrazine[b] Isobutanol Methanol Methyl ethyl ketone Toluene Xylenes	 8015 8240 8260
Halogenated VOCs	Bromoform Carbon tetrachloride Chlorobenzene Chloroform 1,2-Dichloroethane 1,1-Dichloroethylene (trans)-1,2-Dichloroethylene Methylene chloride 1,1,2,2-Tetrachloroethane Tetrachloroethylene 1,1,2-Trichloroethane 1,1,1-Trichloroethane Trichloroethylene Trichlorofluoromethane 1,1,2-Trichloro-1,2,2-trifluoroethane Vinyl Chloride	 8015 8240 8260
Semivolatile Organic Compounds (SVOCs)	Cresols (o, m, p) 1,2-Dichlorobenzene[c] 1,4-Dichlorobenzene[c] 2,4-Dinitrophenol 2,4-Dinitrotoluene Hexachlorobenzene Hexachloroethane Nitrobenzene Polychlorinated biphenyls (PCB)[d] Pentachlorophenol Pyridine[c]	 8250 8270 8082 (for PCBs only)

TABLE B-4 (CONTINUED)
REQUIRED ORGANIC ANALYSES AND TEST METHODS
ORGANIZED BY ORGANIC ANALYTICAL GROUPS

[a] U.S. Environmental Protection Agency (EPA), 1996, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition.
[b] Generator/Storage Sites will have to develop an analytical method for hydrazine. This method will be submitted to the Permittees for approval.
[c] These compounds may also be analyzed as VOCs by SW-846 Methods 8240 and 8260.
[d] Transformer oils containing PCBs have been identified in a limited number of waste streams included in the organic sludges waste matrix code. Therefore, only waste streams included in the solidified organics final waste form shall be analyzed for PCBs.
[e] TCLP (SW-846 Method 1311) may be used to determine if compounds in 20.4.1.200 NMAC (incorporating 40 CFR 261, Subpart C) exhibit a toxicity characteristic.

TABLE B-5
SUMMARY OF SAMPLE PREPARATION AND ANALYTICAL METHODS FOR METALS

Parameters	EPA-Specified Analytical Methods[a,b]
Sample Preparation	3051, or equivalent, as appropriate for analytical method
Total Antimony	6010, 6020, 7040, 7041, 7062
Total Arsenic	6010, 6020, 7060, 7061, 7062
Total Barium	6010, 6020, 7080, 7081
Total Beryllium	6010, 6020, 7090, 7091
Total Cadmium	6010, 6020, 7130, 7131
Total Chromium	6010, 6020, 7190, 7191
Total Lead	6010, 6020, 7420, 7421
Total Mercury	7471
Total Nickel	6010, 6020, 7520, 7521
Total Selenium	6010, 7740, 7741, 7742
Total Silver	6010, 6020, 7760, 7761
Total Thallium	6010, 6020, 7840, 7841
Total Vanadium	6010, 7910, 7911
Total Zinc	6010, 6020, 7950, 7951

[a] U.S. Environmental Protection Agency (EPA), 1996. "Test Methods for Evaluating Solid Waste," Laboratory Manual Physical/Chemical Methods, SW-846, 3rd ed., U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

[b] TCLP (SW-846 Method 1311) may be used to determine if compounds in 20.4.1.200 NMAC (incorporating 40 CFR 261, Subpart C) exhibit a \toxicity characteristic.

TABLE B-6
SUMMARY OF PARAMETERS, CHARACTERIZATION METHODS, AND RATIONALE FOR CH TRANSURANIC MIXED WASTE (STORED WASTE)

Waste Matrix Code Summary Categories	Waste Matrix Code Groups	Characterization Parameter	Method	Rationale
S3000-Homogeneous Solids S4000-Soil/Gravel	• Solidified inorganics • Salt waste • Solidified organics • Contaminated soil/debris	Physical waste form	100% radiography or visual examination	• Verify waste matrix • Demonstrate compliance with waste acceptance criteria (e.g., no free liquids, no incompatible wastes, no compressed gases)
		Headspace gases • Gas volatile organic compounds (VOC)	100% gas sampling and analysis or statistical sampling[a,b] (see Table B-3)	• Quantify concentration of flammable VOCs • Determine potential flammability of transuranic (TRU) mixed waste headspace gases • Quantify concentrations of VOC constituents in headspace of containers • Ensure that environmental performance standards are not exceeded
		Hazardous constituents • TCLP/total metals • TCLP/total VOCs • TCLP/total semi-VOCs	Statistical sampling[b] (see Tables B-4 and B-5)	• Determine characteristic metals and organics • Determine total quantity of metals, VOCs, and semi-VOCs

TABLE B-6 (CONTINUED)
SUMMARY OF PARAMETERS, CHARACTERIZATION METHODS, AND RATIONALE FOR CH TRANSURANIC MIXED WASTE (STORED WASTE)

Waste Matrix Code Summary Categories	Waste Matrix Code Groups	Characterization Parameter	Method	Rationale
S5000–Debris Waste	• Uncategorized metal (metal waste other than lead/ cadmium) • Lead/cadmium waste • Inorganic nonmetal waste • Combustible waste • Graphite waste • Heterogeneous waste • Composite filter waste	Physical waste form	100% Radiography Visual examination (statistical sample)[ab] or visual examination	• Verify waste matrix • Demonstrate compliance with waste acceptance (e.g., no free liquids, no incompatible wastes, no compressed gases)
		Headspace gases • Gas VOCs	100% gas sampling and analysis or statistical sampling[a,b](see Table B-3)	• Quantify concentration of flammable VOCs • Determine potential flammability of TRU mixed waste headspace gases • Quantify concentrations of VOC constituents in headspace of containers • Ensure that environmental performance standards are not exceeded • Verify acceptable knowledge
		Hazardous constituents • TCLP/total metals • TCLP/total VOCs • TCLP/total semi-VOCs	Acceptable knowledge	• Determine characteristic metals and organics • Determine total quantity of metals, VOCs, and semi-VOCs

TABLE B-6 (CONTINUED)
SUMMARY OF PARAMETERS, CHARACTERIZATION METHODS, AND RATIONALE FOR CH TRANSURANIC MIXED WASTE (NEWLY GENERATED WASTE)

Waste Matrix Code Summary Categories	Waste Matrix Code Groups	Characterization Parameter	Method	Rationale
S3000-Homogeneous Solids S4000-Soil/Gravel	• Solidified inorganics • Salt waste • Solidified organics • Contaminated soil/debris	Physical waste form	Documentation and verification[a,c]	• Verify waste matrix • Demonstrate compliance with waste acceptance criteria (e.g., no free liquids, no incompatible wastes, no compressed gases)
		Headspace gases • Gas VOCs (VOCs)	100% gas sampling and analysis or statistical sampling[a,b](see Table B-3)	• Quantify concentration of flammable VOCs • Determine potential flammability of TRU mixed waste headspace gases • Quantify concentrations of VOC constituents in headspace of containers • Ensure that environmental performance standards are not exceeded
		Hazardous constituents • TCLP/total metals • TCLP/total VOCs • TCLP/total semi-VOCs	Statistical sampling[b] (see Tables B-4 and B-5)	• Determine characteristic metals and organics • Determine total quantity of metals, VOCs, and semi-VOCs

TABLE B-6 (CONTINUED)
SUMMARY OF PARAMETERS, CHARACTERIZATION METHODS, AND RATIONALE FOR CH TRANSURANIC MIXED WASTE (NEWLY GENERATED WASTE)

Waste Matrix Code Summary Categories	Waste Matrix Code Groups	Characterization Parameter	Method	Rationale
S5000–Debris Waste	• Uncategorized metal (metal waste other than lead/ cadmium) • Lead/cadmium waste • Inorganic nonmetal waste • Combustible waste • Graphite waste • Heterogeneous waste • Composite filter waste	Physical waste form	Documentation and verification	• Verify waste matrix • Demonstrate compliance with waste acceptance (e.g., no free liquids, no incompatible wastes, no compressed gases)
		Headspace gases • Gas VOCs	100% gas sampling and analysis (see Table B-3)	• Quantify concentration of flammable VOCs • Determine potential flammability of TRU mixed waste headspace gases • Quantify concentrations of VOC constituents in headspace of containers • Ensure that environmental performance standards are not exceeded • Verify acceptable knowledge
		Hazardous constituents • TCLP/total metals • TCLP/total VOCs • TCLP/total semi-VOCs	Acceptable knowledge	• Determine characteristic metals and organics • Determine total quantity of metals, VOCs, and semi-VOCs

[a] Applies to certain waste streams that meet the conditions in Section B-3a(1)
[b] Number determined as specified in Permit Attachment B2.
[c] See discussion in Permit Attachment B4.

TABLE B-7
REQUIRED PROGRAM RECORDS MAINTAINED IN GENERATOR/STORAGE SITE PROJECT FILES[a]

Lifetime Records • Field sampling data forms • Field and laboratory chain-of-custody forms • Test facility and laboratory batch data reports • ~~Waste Stream Characterization Package~~ • Sampling Plans • Data reduction, validation, and reporting documentation • Acceptable knowledge documentation • Data Validation Summary ~~Data reconciliation report~~ • Waste Stream Profile Form and Characterization Information Summary
Non-Permanent Records • Nonconformance documentation • Variance documentation • Assessment documentation • Gas canister tags • Methods performance documentation • Performance Demonstration Program documentation • Sampling equipment certifications • Calculations and related software documentation • Training/qualification documentation • QAPjPs (generator/storage sites) documentation (all revisions) • Calibration documentation • Analytical raw data • Procurement documentation • QA procedures (all revisions) • Technical implementing procedures (all revisions) • Audio/video recording (radiography, visual, etc.)

[a] Site Project Files include both hard copies and electronic records. Records that are available electronically need only be produced in hard copy format upon request of the Permittees. Electronic records must be migrated (updated to new hardware and/or software) before the previous electronic media is no longer useable.

TABLE B-8
WIPP WASTE INFORMATION SYSTEM REQUIRED INFORMATION ~~DATA FIELDS~~[a]

~~Characterization Module Data Fields~~ [b]	
Container ID [e]	Total VOC Sample Date
Generator EPA ID	Total VOC Analysis Date
Generator Address	Total VOC Analyte Name [d]
Generator Name	Total VOC Analyte Concentration [d]
Generator Contact	Total Metal Sample Date
Hazardous Code(s)	Total Metal Analysis Date
Headspace Gas Sample Date	Total Metal Analyte Name-[d]
Headspace Gas Analysis Date	Total Metal Analyte Concentration [d]
Headspace Gas Analyte [d]	Semi-VOC Sample Date
Headspace Gas Concentration-[d]	Semi-VOC Analysis Date
Headspace Gas Char. Method-[d]	Semi-VOC Analyte Name-[d]
Total VOC Char. Method-[d]	Semi-VOC Concentration-[d]
Total Metals Char. Method-[d]	Transporter EPA ID
Total Semi-VOC Char. Method-[d]	Transporter Name
Item Description Code	Visual Exam Container-[e]
Haz. Manifest Number	Waste Material Parameter [d]
NDE Complete-[e]	Waste Material Weight-[d]
PCB Concentration	Waste Matrix Code
	Waste Matrix Code Group
	Waste Stream Profile Number

~~Certification Module Data Fields~~	
Container ID-[c]	Handling Code
Container type	
Container Weight	
Contact Dose Rate	
Container Certification date	
Container Closure Date	

~~Transportation Data Module~~	
TRUPACT Number	Ship Date
Assembly Number [a,f]	Receive Date
Container IDs [c,d]	
ICV Closure Date	

TABLE B-8
WIPP WASTE INFORMATION SYSTEM REQUIRED INFORMATION ~~DATA FIELDS~~[a]

~~Disposal Module Data~~
Container ID [e]
Disposal Date
Disposal Location

~~[a] This is not a complete list of the WWIS data fields.~~

~~[b] Some of the fields required for characterization are also required for certification and/or transportation.~~

~~[c] Container ID is the main relational field in the WWIS Database.~~

~~[d] This is a multiple occurring field for each analyte, nuclide, etc.~~

~~[e] These are logical fields requiring only a yes/no.~~

[a] [f] Required for 7-Packs of 55 gal drums to tie all of the drums in that assembly together. This facilitates the identification of waste containers in a shipment without need to breakup the assembly.

FIGURES

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~~Figure B-1~~
~~WIPP Waste Stream Profile Form~~

~~Figure B-1~~
~~WIPP Waste Stream Profile Form~~

~~Figure B-2~~
~~Data Collection Design for Characterization of Newly Generated Waste~~

~~Figure B-3~~
~~Data Collection Design for Characterization of Retrievably Stored Waste~~

~~Figure B-5~~
~~TRU Mixed Waste Screening Flow Diagram~~

Attachment D: Proposed Changes to Permit Attachment B1

Reference	Affected Text
Permit Attachment B1, Section B1-4, ¶3	All samples will be uniquely identified to ensure the integrity of the sample and can be used to identify the generator/storage site and date of collection. Sample tags, barcodes, or labels will be affixed to all samples. Sample tags and labels ~~and~~ will identify at a minimum: • Sample ID number • Sampler initials and organization • Ambient temperature and pressure (for gas samples only) • Sample description • Requested analyses • Date ~~Data~~ and time of collection • QC designation (if applicable) If barcodes are used, the information required for sample tags or labels must be electronically available for each barcode.

Attachment E: Proposed Changes to Permit Attachment B3

(Note that Permit Attachment B3 is included in its entirety due to the number of changes included in this permit modification request.)

ATTACHMENT B3

WASTE CHARACTERIZATION QUALITY ASSURANCE/QUALITY CONTROL

~~QUALITY ASSURANCE OBJECTIVES AND DATA VALIDATION TECHNIQUES FOR WASTE CHARACTERIZATION SAMPLING AND ANALYTICAL METHODS~~

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ATTACHMENT B3

WASTE CHARACTERIZATION QUALITY ASSURANCE/QUALITY CONTROL

~~QUALITY ASSURANCE OBJECTIVES AND DATA VALIDATION TECHNIQUES FOR WASTE CHARACTERIZATION SAMPLING AND ANALYTICAL METHODS~~

TABLE OF CONTENTS

List of Tables

List of Figures

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B3-1 General Requirements ~~Validation Methods~~

~~The Permittees shall require the generator/storage sites (**sites**) to perform validation of all data (qualitative as well as quantitative) so that data used for Waste Isolation Pilot Plant (**WIPP**) compliance programs will be of known and acceptable quality. Validation includes a quantitative determination of precision, accuracy, completeness,, and method detection limits (as appropriate) for analytical data (headspace Volatile Organics Compounds (**VOC**), total VOCs, Semivolatile Organic Compounds (**SVOC**), and metals data). Quantitative data validations shall be performed according to the conventional methods outlined below (equations B3-1 through B3-8). These quantitative determinations will be compared to the Quality Assurance Objectives (**QAOs**) specified in Sections B3-2 through B3-9. A qualitative determination of comparability and representativeness will also be performed.~~

~~The qualitative data or descriptive information generated by radiography and visual examination is not amenable to statistical data quality analysis. However, radiography and visual examination are complementary techniques yielding similar data for determining the waste matrix code and waste material parameter weights of waste present in a waste container. Therefore, visual examination results shall be used to verify the waste matrix code and waste material parameter weights determined by radiography. The waste matrix code is determined and waste material parameter weights are estimated to verify that the container is properly included in the appropriate waste stream.~~

B3-1a Data Review, Validation, and Verification

Procedures shall be developed for the review, validation, and verification of data at the Data Generation Level; the validation and verification of data at the Site Project Level; and the verification of data at the Permittee level. (Note that for sites using an Electronic Data Evaluation System, some review, validation, and verification activities may be combined and the levels may not be discernable.) All waste characterization data for each waste container will be subject to data review, validation, and verification. Data review determines if raw data have been properly collected and ensures raw data are properly reduced. Data validation confirms that the data reported satisfy the requirements of this Waste Analysis Plan (**WAP**) and are accompanied by a release via written or electronic signature or electronic approval. Data verification authenticates that data as presented represent the testing, sampling, and analysis activities as performed and have been subject to the appropriate levels of data review.

B3-1b Quality Assurance Objectives

Quality Assurance Objectives (**QAOs**) have been established specific to each characterization method for ~~Data validation will be used to assess the quality of waste characterization data collected based upon project~~ precision, accuracy, completeness, comparability, and representativeness ~~objectives~~. Some waste characterization methods also have QAOs defined for calibration, method detection limits, and Program Required Quantitation Limits (**PRQL**). Calculations required in order to evaluate QAOs will be performed at the Data Generation or the Site Project Level, as appropriate. The~~se~~ general objectives are described below, while specific QAOs for each waste characterization method are found in Sections B3-2 through B3-9:

Precision

Precision is a measure of the mutual agreement among multiple measurements of a single analyte, either by the same method or by different methods. Precision is either expressed as the relative percent difference (**RPD**) for duplicate measurements or as the percent relative standard deviation (**%RSD**) for three or more replicate measurements. For duplicate measurements, the precision expressed as the RPD is calculated as follows:

$$RPD = \frac{C_1 - C_2}{\frac{(C_1 + C_2)}{2}} \times 100 \qquad \text{(B3-1)}$$

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

For three or more replicate measurements, the precision expressed as the %RSD is calculated as follows:

$$\%RSD = \frac{s}{y_{mean}} \times 100 \qquad \text{(B3-2)}$$

where s is the standard deviation and y_{mean} is the mean of the replicate sample analyses.

The standard deviation, s, is calculated as follows:

$$s = \sqrt{\frac{\sum_{i=1}^{n} (y_i - y_{mean})^2}{n - 1}} \quad \text{(B3-3)}$$

where y_i is the measured value of the *i*th replicate sample analysis measurement, and n equals the number of replicate analyses.

Another aspect of precision is associated with analytical equipment calibration. In these instances, the percent difference (**%D**) between multiple measurements of an equipment calibration standard shall be calculated as follows:

$$\%D = \frac{|C_1 - C_2|}{C_1} \times 100 \quad \text{(B3-4)}$$

where C_1 is the initial measurement and C_2 is the second or other additional measurement.

Accuracy

Accuracy is the degree of agreement between a measured analyte concentration (or the average of replicate measurements of a single analyte concentration) and the true or known concentration. Accuracy is determined as the percent recovery (**%R**).

For situations where a standard reference material is used, the %R is calculated as follows:

$$\%R = \frac{C_m}{C_{srm}} \times 100 \quad \text{(B3-5)}$$

where C_m is the measured concentration value obtained by analyzing the sample and C_{srm} is the "true" or certified concentration of the analyte in the sample.

For measurements where matrix spikes are used, the %R is calculated as follows:

$$\%R = \frac{S - U}{C_{sc}} \times 100 \quad \text{(B3-6)}$$

where S is the measured concentration in the spiked aliquot, U is the measured concentration in the unspiked aliquot, and C_{sc} is the actual concentration of the spike added.

Method Detection Limit

The method detection limit (**MDL**) is the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. The MDL for all quantitative measurements (except for those using Fourier Transform Infrared Spectroscopy [**FTIRS**]) is defined in Section 5.0 of SW-846 Chapter One. ~~as follows:~~

~~$$MDL = t_{(n-1,1-\alpha=.99)} \times s \quad \text{(B3-7)}$$~~

~~where $T_{(n-1,1-\alpha=.99)}$ is the t distribution value appropriate to a 99 percent confidence level and a standard deviation estimate with n-1 degrees of freedom, n is the number of observations, and s is the standard deviation of replicate measurements.~~

For headspace-gas analysis using FTIRS, MDL is defined as follows:

$$MDL = 3s \quad \text{(B3-8)}$$

where s is the standard deviation. Initially, a minimum of seven samples spiked at a level of three to five times the estimated MDL and analyzed on non-consecutive days must be used to establish the MDLs. MDLs should be updated using the results of the laboratory control sample or on-line control samples.

Completeness

Completeness is a measure of the amount of valid data obtained from the overall measurement system compared to the amount of data collected and submitted for analysis. Completeness must be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Completeness, expressed as the percent complete (**%C**), is calculated as follows:

$$\%C = \frac{V}{n} \times 100 \quad \text{(B3-9)}$$

where V is the number of valid sampling or analytical results obtained and n is the number of samples submitted for analysis.

Comparability

Comparability is the degree to which one data set can be compared to another. Comparability of data generated at different sites will be assured through the use of standardized, approved testing, sampling, preservation, and analytical techniques and by meeting the QAOs specified in Sections B3-2 through B3-9.

The comparability of waste characterization data shall be ensured through the use of generator/storage site data usability criteria. The Permittees shall ensure that data usability criteria are consistently established and used by the generator/storage sites to assess the usability of analytical and testing data. The criteria shall address, as appropriate, the following:

- Definition or reference of criteria used to define and assign data qualifier flags based on QAO ~~Quality Assurance Objective~~ results,
- Criteria for assessing the useability of data impacted by matrix interferences,
- Criteria for assessing the useability of data based upon positive and negative bias as indicated by quality control data, of data qualifiers, and qualifier flags,
- Criteria for assessing the useability of data due to
  - Severe matrix effects,
  - Misidentification of compounds,
  - Gross exceedance of holding times,
  - Failure to meet calibration or tune criteria
- Criteria for assessing the useability of data that does not meet minimum detection limit requirements.

The Permittees shall be responsible for evaluating generator/storage site data useability and shall assess implementation through the generator/storage site audit.

Representativeness

Representativeness is the degree to which sample data represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter that concerns the proper design of the sampling program.

Representativeness of waste containers from waste streams subjected to visual examination (**VE**) and homogeneous solids and soil/gravel sampling and analysis will be validated, through documentation, that a true random sample with an adequate population was collected. Since representativeness is a quality characteristic that expresses the degree to which a sample or group of samples represents the population being studied, the random selection of waste containers ensures representativeness on a Program level. The Permittees shall require the Ssite Project Manager to document that the selected waste containers from within a waste stream were randomly selected. Sampling personnel shall verify that proper procedures are followed to ensure that samples are representative of the waste contained in a particular waste container or a waste stream.

~~Nonconformance to Data Quality Objectives (DQOs)~~

~~For any non-administrative nonconformance related to applicable requirements specified in this Waste Analysis Plan (**WAP**) which are first identified at the site Project Manager signature release level (i.e., a failure to meet a data quality objective [DQO]), the Permittees shall receive written notification within five (5) calendar days of identification and shall also receive a nonconformance report within thirty (30) calendar days of identification of the incident. The Permittees shall require the generator/storage site to implement a corrective action which remedies the nonconformance prior to management, storage, or disposal of the waste at WIPP. The Permittees shall send NMED a monthly summary of nonconformances identified during the previous month, indicating the number of nonconformances received and the generator/storage sites responsible.~~

~~Identification of Tentatively Identified Compounds~~

~~In accordance with SW-846 convention, identification of compounds detected by gas chromatography/mass spectrometry methods that are not on the list of target analytes shall be~~

reported. Both composited and individual container headspace gas, volatile analysis (TCLP/Totals), and semi-volatile (TCLP/Totals) shall be subject to tentatively identified compound (**TIC**) reporting. These TICs for GC/MS Methods are identified in accordance with the following SW-846 criteria:

- Relative intensities of major ions in the reference spectrum (ions greater than 10% of the most abundant ion) should be present in the sample spectrum.

- The relative intensities of the major ions should agree within ± 20 percent.

- Molecular ions present in the reference spectrum should be present in the sample spectrum

- Ions present in the sample spectrum but not in the reference spectrum should be reviewed for possible background contamination or presence of coeluting compounds

- Ions present in the reference spectrum but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting peaks.

- The reference spectra used for identifying TICs shall include, at minimum, all of the available spectra for compounds that appear in the 20.4.1.200 NMAC (incorporating 40 CFR Part 261) Appendix VIII list. The reference spectra may be limited to VOCs when analyzing headspace gas samples.

- TICs for headspace gas analyses that are performed through FTIR analyses shall be identified in accordance with the specifications of SW-846 Method 8410.

TICs shall be reported as part of the analytical batch data reports for GC/MS Methods in accordance with the following minimum criteria:

- a TIC in an individual container headspace gas or solids sample shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 10% of the area of the nearest internal standard.

- a TIC in a composited headspace gas sample that contains 2 to 5 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 2% of the area of the nearest internal standard.

- a TIC in a composited headspace gas sample that contains 6 to 10 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 1% of the area of the nearest internal standard.

- a TIC in a composited headspace gas sample that contains 11 to 20 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 0.5% of the area of the nearest internal standard.

TICs that meet the SW-846 identification criteria, are reported in 25 percent of all waste containers sampled from a given waste stream, and that appear in the 20.4.1.200 NMAC (incorporating 40 CFR §261) Appendix VIII list, will be compared to acceptable knowledge data to determine if the TIC is a listed waste in the waste stream. TICs identified through headspace gas analyses that meet the Appendix VIII list criteria and the 25 percent identification criteria for a waste stream will be added to the headspace gas waste stream target list regardless of the hazardous waste listing associated with the waste stream. TICs reported from the Totals VOC or SVOC analyses may be excluded from the target analyte list for a waste stream if the TIC is a constituent in an F-listed waste whose presence is attributable to waste packaging materials or radiolytic degradation from acceptable knowledge documentation. If a listed waste constituent TIC cannot be attributed to waste packaging materials, radiolysis, or other origins, the constituent will be added to the target analyte list and new hazardous waste codes will be assigned, if appropriate. TICs subject to inclusion on the target analyte list that are toxicity characteristic parameters shall be added to the target analyte list regardless of origin because the hazardous waste designation for these codes is not based on source. However, for toxicity characteristic and non-toxic F003 constituents, the site may take concentration into account when assessing whether to add a hazardous waste code. If a target analyte list for a waste stream is expanded due to the presence of TICs, all samples collected from that waste stream will be analyzed for constituents on the expanded list.

B3-1c Laboratory Qualification

The Permittees will ensure that generator/storage sites conduct analyses using laboratories that are qualified through participation in the Performance Demonstration Program (**PDP**) (DOE, 1995a, b).

Analytical methods used by the laboratories shall: 1) satisfy all of the appropriate QAOs, and 2) be implemented through laboratory-documented standard operating procedures (**SOP**).

The Permittees shall further require all analytical laboratories analyzing Waste Isolation Pilot Plant (**WIPP**) waste characterization samples for the generator/storage sites to have established, documented Quality Assurance (**QA**)/Quality Control (**QC**) programs. The laboratory's QA/QC program shall include the following:

- Facility organization
- A list of equipment/instrumentation
- Operating procedures
- Laboratory QA/QC procedures
- QA review
- Laboratory records management

B3-1d Sample Control

The generator/storage sites will implement a sample handling and control program that will include the maintenance of field documentation records, proper labeling, and a chain of custody (**COC**) record. The generator/storage site Quality Assurance Project Plan (**QAPjP**) or procedures referenced in the QAPjP will document this program and include COC forms to control the sample from the point of origin to the final analysis result reporting. Details of this sample control program are provided in Permit Attachment B1 and are summarized below to include:

- Field Documentation of samples including: point of origin, date of sample, container ID, sample type, analysis requested, and COC number.

- Labeling and/or tagging including: sample numbering, sample ID, sample date, sampling conditions, and analysis requested. This requirement may also be addressed through the use of barcodes.

- COC control including: name of sample relinquisher, sample receiver, and the date and time of the sample transfer.

- Proper sample handling and preservation.

B3-2 Headspace-Gas Sampling

Quality Assurance Objectives

Headspace-gas sampling will occur from the headspace within each drum of transuranic (**TRU**) mixed waste or randomly selected containers from waste streams that meet the conditions for reduced headspace gas sampling listed in Attachment B, Section B-3a(1).

The precision and accuracy of the drum headspace-gas sampling operations must be assessed by analyzing field QC headspace-gas samples. These samples must include equipment blanks, field reference standards, field blanks, and field duplicates. If the QAOs described below are not met, a nonconformance report must be prepared, submitted, and resolved (Section B3-1413).

Precision

The precision of the headspace-gas sampling and analysis operation must be assessed by sequential collection of field duplicates for manifold sampling operations or simultaneous collection of field duplicates for direct canister sampling operations for Volatile Organic Compound (**VOCs**) determination. Corrective actions must be taken if the RPD exceeds 25 percent for any analyte found greater than the PRQL in both of the duplicate samples.

Accuracy

A field reference standard must be collected using headspace-gas sampling equipment to assess the accuracy of the headspace-gas sampling operation at a frequency of one field reference standard for every 20 drums sampled or per sampling batch. Corrective action must be taken if the %R of the field-reference standard is less than 70 or greater than 130.

Field blanks must also be collected at a frequency of 1 field blank for every 20 drums or sampling batch sampled to assess possible contamination in the headspace gas sampling method. Equipment blanks must also be collected at a frequency of 1 equipment blank for each equipment cleaning batch to assess possible contamination in the equipment cleaning method. Corrective actions must be taken if the blank exceeds three times the MDLs listed for any of the compounds listed in Table B3-2.

Completeness

Sampling completeness shall be expressed as the number of valid samples collected as a percent of the total number of samples collected for each waste stream. The completeness can also be expressed as the number of valid samples collected as a percent of the total number of drums for each waste stream. A valid sample is defined as a sample collected in accordance with approved sampling methods and the drum was properly prepared for sampling (e.g., the polyliner was vented to the drum headspace). The Permittees shall require participating sampling facilities to achieve a minimum 90 percent completeness. The amount and type of data that may be lost during the headspace-gas sampling operation cannot be predicted in advance. The Permittees shall require the Site Project ~~Quality Assurance (~~QA~~)~~ Officer to evaluate the importance of any lost or contaminated headspace-gas samples and take corrective action as appropriate.

Comparability

Consistent use and application of uniform procedures and equipment, as specified in Permit Attachment B1 and application of data useability criteria, should ensure that headspace gas sampling operations are comparable when sampling headspace at the different sampling facilities. The Permittees shall require each site to take corrective actions if uniform procedures, equipment, or operations are not followed without approved and justified deviations. In addition,

laboratories analyzing samples must successfully participate in the ~~Performance Demonstration Program (~~PDP~~)~~.

Representativeness

Specific headspace-gas sampling steps to ensure samples are representative include:

- A sample canister cleaning and leak check after assembly
- Sampling equipment cleaning or disposal after use
- Sampling equipment leak check after sample collection
- Use of sample canisters with passivated internal surfaces
- Use of low-internal-volume sampling equipment
- Collection of samples with a low-sample volume to available headspace volume ratio (less than 10 percent of the headspace when the headspace can be determined)
- Careful and documented pressure regulation of all activities specified in Attachment B1, Section B1-1
- Performance audits
- Collection of equipment blanks, field reference standard, field blanks, and field duplicates at the specified frequencies.
- Manifold pressure sensors and temperature sensors calibrated before initial use and annually using National Institute of Standards and Technology (**NIST**), or equivalent standards.
- Organic Vapor Analyzer (**OVA**) calibrated daily, prior to first use, or as necessary according to manufacturers specifications.

Failure to perform the checks at the prescribed frequencies would result in corrective actions.

B3-3 Sampling of Homogeneous Solids and Soils/Gravel

Quality Assurance Objectives

To ensure that sampling is conducted in a representative manner on a waste-stream basis for waste containers containing homogeneous solids and soil/gravel, samples must be collected randomly in both the horizontal and vertical planes of each container's waste. For waste containers that contain homogeneous solids and soil/gravel in smaller containers (e.g., 1 gal [4.0 L] poly bottles) within the waste container, one randomly chosen smaller container must be sampled from each drum.

Precision

Sampling precision must be determined by collecting and sampling field duplicates (e.g., co-located cores or co-located samples as described in Permit Attachment B1-2b(1)) once per sampling batch or once per week during sampling operations, whichever is more frequent. A sampling batch is a suite of homogeneous solids and soil/gravel samples collected consecutively using the same sampling equipment within a specific time period. A sampling batch can be up to 20 samples (excluding field QC samples), all of which must be collected within 14 days of the first sample in the batch. The Permittees shall require the Site Project QA Officer to calculate and report the RPD between co-located core/samples.

The recommended method for establishing acceptance criteria for co-located cores and co-located samples is the F-test method because the F-Test: 1) does not require potentially arbitrary groupings into batches, 2) is based on exact distributions, and 3) is more likely to detect a change in the process. When a sufficient number of samples are collected (25 to 30 pairs of co-located cores or samples), control charts of the RPD will be developed for each constituent and for each waste matrix or waste type (e.g., pyrochemical salts or organic sludges). The limits for the control chart will be three standard deviations above or below the average RPD. Once constructed, RPDs for additional co-located pairs will be compared with the control chart to determine whether or not the co-located cores are acceptable. Periodically, the control charts will be updated using all available data.

The statistical test will involve calculating the variance for co-located cores and samples by pooling the variances computed for each pair of duplicate results. The variance for the waste stream will be computed excluding any data from drums with co-located cores, because the test requires the variance estimates to be independent. All data must be transformed to normality prior to computing variances and performing the test. The test hypothesis is evaluated using the F distribution and the method for testing the difference in variances.

Accuracy

Sampling accuracy through the use of standard reference materials shall not be measured. Because waste containers containing homogeneous solids and soil/gravel with known quantities of analytes are not available, sampling accuracy cannot be determined. However, sampling methods and requirements described are designed to minimize sample degradation and hence maximize sampling accuracy.

Sampling accuracy as a function of sampling cross-contamination will be measured. Equipment blanks will be collected at a frequency of once per equipment cleaning batch. Corrective actions must be taken if the blank exceeds three times the MDLs (Program Required Detection Limits (PRDLs) for metals) listed for any of the compounds or analytes listed in Tables B3-4, B3-6, and B3-8. Equipment blanks will be collected from the following equipment types:

- Fully assembled coring tools
- Liners cleaned separately from coring tools
- Miscellaneous sampling equipment that is reused (bowls, spoons, chisels)

Completeness

Sampling completeness shall be expressed as the number of valid samples collected as a percent of the total number of samples collected for each waste stream. A valid sample is any sample that is collected from a randomly selected drum using randomly selected horizontal and vertical planes in accordance with approved sampling methods. The Permittees shall require participating sampling facilities to achieve a minimum 90 percent completeness.

Comparability

Consistent use and application of uniform procedures, sampling equipment, and measurement units must ensure that sampling operations are comparable. Consistent application of data useability criteria will also ensure comparability. In addition, the Permittees shall require laboratories analyzing samples to successfully participate in the PDP.

Representativeness

Specific steps to ensure the representativeness of samples include the following for both waste containers and smaller containers:

- Coring tools and sampling equipment must be clean prior to sampling.

- The entire depth of the waste minus a site defined approved safety factor must be cored, and the core collected must have a length greater than or equal to 50 percent of the depth of the waste. This is called the core recovery and is calculated as follows:

$$Core\ recovery\ (percent) = \frac{y}{x} \times 100 \qquad \text{(B3-10)}$$

where

x = the depth of the waste in the container
y = the length of the core collected from the waste.

- Coring operations and tool selection should be designed to minimize alteration of the in-place waste characteristics. Minimal waste disturbance must be verified by visually examining the core and describing the observation (e.g., undisturbed, cracked, or pulverized) in the field logbook.

  If core recovery is less than 50 percent of the depth of the waste, a second coring location shall be randomly selected. The core with the best core recovery shall be used for sample collection.

One randomly selected container within a drum will be chosen if the drum contains individual waste containers.

B3-4 Radiography

The qualitative data or descriptive information generated by radiography and VE is not amenable to statistical data quality analysis. However, radiography and VE are complementary techniques yielding similar data for determining the waste matrix code and waste material parameter weights of waste present in a waste container. Therefore, VE results shall be used to verify the waste matrix code and waste material parameter weights determined by radiography. The waste matrix code is determined and waste material parameter weights are estimated to verify that the container is properly included in the appropriate waste stream.

Quality Assurance Objectives

The QAOs for radiography are detailed in this section. If the QAOs described below are not met, then corrective action shall be taken. It should be noted that radiography does not have a specific MDL because it is primarily a qualitative determination. The objective of radiography for the program is to verify the waste matrix code and identify prohibited items for each waste container and to estimate each waste material parameter weight (Table B3-1). The Permittees shall require each site to describe all activities required to achieve these objectives in the site ~~quality assurance project plan (~~QAPjP~~)~~ and ~~standard operating procedures (~~SOPs~~)~~.

Data to meet these objectives must be obtained from an audio/videotaped (or equivalent media) scan provided by trained radiography operators at the sites. Results must also be recorded on a radiography data form. The precision, accuracy, completeness, and comparability objectives for radiography data are presented below.

Precision

The qualitative determinations, such as verifying the waste matrix code, made during radiography do not lend themselves to statistical evaluation of precision because of the qualitative nature of the inspection. However, comparison of data derived from radiography and VE ~~visual examination~~ on the same waste containers at the Rocky Flats Environmental Technology Site and the Idaho National Engineering Laboratory indicates that radiography operators can provide estimated inventories and weights of waste items in a waste container.

As a measure of precision, the Permittees shall require each Site Project QA Officer to calculate and report the RPD between the estimated waste material parameter weights as determined by radiography and these same parameters as determined by VE ~~visual examination~~. Additionally, the precision of radiography is verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern.

Accuracy

The programmatic accuracy at which the waste matrix code and waste material parameter weights can be determined must be documented through VE ~~visual examination~~ of a randomly selected statistical portion of waste containers. The Permittees shall require the Site Project QA Officer to calculate and report the miscertification rate of waste containers that require assignment to a different waste matrix code or are found to contain prohibited items after VE ~~visual examination~~ as a measure of radiography accuracy. The miscertification rate shall be used to determine the number of drums subject to confirmatory VE ~~visual examination~~.

Completeness

An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100 percent of the retrievably stored waste containers in the program for all waste containers subject to radiography. All audio/videotapes (or equivalent media) and radiography data forms will be subject to validation as indicated in Sections B3-10 and B3-11.

Comparability

The comparability of radiography data from different sites shall be enhanced by using standardized radiography procedures and operator qualifications.

B3-5 Gas Volatile Organic Compound Analysis

Quality Assurance Objectives

The development of DQOs specifically for this program has resulted in the QAOs listed in Table B3-2. The specified QAOs represent the required quality of data necessary to draw valid conclusions regarding program objectives. WAP-required limits, such as the ~~program required~~

~~quantitation limits (~~PRQL~~)~~ associated with VOC analysis, are specified to ensure that the analytical data collected satisfy the requirements of all data users. A summary of the Quality Control Samples and the associated acceptance criteria is included in Table B3-3. Key data-quality indicators for laboratory measurements are defined below.

Precision

Precision shall be assessed by analyzing laboratory duplicates and replicate analyses of laboratory-control samples and PDP blind-audit samples. Results from measurements on these samples must be compared to the criteria listed in Table B3-2. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Accuracy

Accuracy as %R shall be assessed for the laboratory operations by analyzing PDP blind-audit samples and laboratory-control samples. Results from these measurements must be compared to the criteria listed in Table B3-2. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Calibration

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes, Initial Calibrations, and Continuing Calibration will be performed and evaluated using the procedures and criteria specified in Table B3-3. These criteria will be used to demonstrate acceptable calibration and to trigger corrective action when control limits are exceeded.

Method Detection Limit

MDLs shall be expressed in nanograms for VOCs and must be less than or equal to those listed in Table B3-2. MDLs shall be determined based on the method described in Section B3-1b. The detailed procedures for MDL determination shall be included in site SOPs.

Program Required Quantitation Limit

Laboratories must demonstrate the capability to quantitate analytes at or below the PRQLs given in Table B3-2. Laboratories shall set the concentration of at least one calibration standard below the PRQL. The detailed procedures for PRQL demonstration shall be included in laboratory SOPs.

Completeness

Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. A composited sample is treated as one sample for the purposes of completeness, because only one sample is run through the analytical instrument. Valid results are defined as results that meet the data useability criteria based on application of the Quality Control Criteria specified in Tables B3-2 and B3-3; and meet the detection limit, calibration, representativeness, and comparability criteria within this section. The Permittees shall require that participating laboratories meet the completeness criteria specified in Table B3-2.

Comparability

For VOC analysis, data generated through analysis of samples from different sites shall be comparable. The Permittees shall require each site to achieve comparability by using

standardized methods and traceable standards and by requiring all sites to successfully participate in the PDP.

Representativeness

Representativeness for VOC analysis shall be achieved by collecting sufficient numbers of samples using clean sampling equipment that does not introduce sample bias. Samples must be collected as described in Permit Attachment B1.

B3-6 Total Volatile Organic Compound Analysis

Quality Assurance Objectives

The development of DQOs specifically for this program has resulted in the QAOs listed in Table B3-4. The specified QAOs represent the required quality of data necessary to draw valid conclusions regarding program objectives. WAP-required limits, such as the PRQL associated with VOC analysis, are specified to ensure that the analytical data collected satisfy the requirements of all data users. Key data-quality indicators for laboratory measurements are defined below.

Precision

Precision shall be assessed by analyzing laboratory duplicates or matrix spike duplicates, replicate analyses of laboratory control samples, and PDP blind-audit samples. Results from measurements on these samples must be compared to the criteria listed in Table B3-4. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Accuracy

Accuracy as %R shall be assessed for the laboratory operations by analyzing laboratory control samples, matrix spikes, surrogate compounds, and PDP blind-audit samples. Results from these measurements for matrix spikes samples must be compared to the %R criteria listed in Table B3-4. Results for surrogates and internal standards are evaluated as specified in the SW-846 method (EPA 1996) or Table B3-5. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Laboratory blanks shall be assessed to determine possible laboratory contamination and are evaluated as specified in Table B3-5. These QC measurements will be used to demonstrate acceptable levels of laboratory contamination and to trigger corrective action when control limits are exceeded.

Calibration

GC/MS Tunes, Initial Calibrations, and Continuing Calibration will be performed and evaluated using the procedures and criteria specified in Table B3-5 and the SW-846 method (EPA 1996). These criteria will be used to demonstrate acceptable calibration and to trigger corrective action when control limits are exceeded.

Method Detection Limit

MDLs shall be expressed in milligrams per kilogram (mg/kg) for VOCs and must be less than or equal to those listed in Table B3-4. The detailed procedures for MDL determination shall be included in site SOPs.

Program Required Quantitation Limit

Laboratories must demonstrate the capability to quantitate analytes in samples at or below the PRQLs given in Table B3-4. Laboratories shall set the concentration of at least one calibration standard below the PRQL. The detailed procedures for PRQL demonstration shall be included in laboratory SOPs.

Completeness

Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Valid results are defined as results that meet the data useability criteria based upon application of the Quality Control Criteria specified in Tables B3-4 and B3-5 and meet the calibration, detection limit, representativeness, and comparability criteria within this section. Participating laboratories must meet the completeness criteria specified in Table B3-4.

Comparability

For VOC analysis, data generated through analysis of samples from different sites shall be comparable. The Permittees shall require sites to achieve comparability by using standardized SW-846 sample preparation and methods that meet the QAO requirements in Tables B3-4 and B3-5, traceable standards, and by requiring all sites to successfully participate in the PDP.

Generator/storage sites may use the most recent version of SW-846. Any changes to SW-846 methodology that results in the elimination of sample preparation or analytical methods in use at generator/storage sites must be addressed as a corrective action to address the comparability of data before and after the SW-846 modification.

Representativeness

Representativeness for VOC analysis shall be achieved by collecting unbiased samples. Samples must be collected as described in Permit Attachment B1.

B3-7 Total Semivolatile Organic Compound Analysis

Quality Assurance Objectives

The development of DQOs specifically for this program has resulted in the QAOs listed in Table B3-6. The specified QAOs represent the required quality of data necessary to draw valid conclusions regarding program objectives. WAP-required limits, such as the PRQLs, are specified to ensure that the analytical data collected satisfy the requirements of all data users. A summary of Quality Control Samples and associated acceptance criteria for this analysis is included in Table B3-7. Key data-quality indicators for laboratory measurements are defined below.

Precision

Precision shall be assessed by analyzing laboratory duplicates or matrix spike duplicates, replicate analyses of laboratory control samples, and PDP blind-audit samples. Results from measurements on these samples must be compared to the criteria listed in Table B3-6. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Accuracy

Accuracy as %R shall be assessed for the laboratory operations by analyzing laboratory control samples, matrix spikes, surrogate compounds, and PDP blind-audit samples. Results from these measurements for matrix spikes samples must be compared to the %R criteria listed in

Table B3-6. Results for surrogates and internal standards are evaluated as specified in the SW-846 method (EPA 1996) or Table B3-7. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Laboratory blanks shall be assessed to determine possible laboratory contamination and are evaluated as specified in Table B3-7. These QC measurements will be used to demonstrate acceptable levels of laboratory contamination and to trigger corrective action when control limits are exceeded.

Calibration

GC/MS Tunes, Initial Calibrations, and Continuing Calibration will be performed and evaluated using the procedures and criteria specified in Table B3-7 and the SW-846 method (EPA 1996). These criteria will be used to demonstrate acceptable calibration and to trigger corrective action when control limits are exceeded.

Method Detection Limit

MDLs shall be expressed in mg/kg for semivolatile organic compounds (SVOCs) and must be less than or equal to those listed in Table B3-6. The detailed procedures for MDL determination shall be included in site SOPs.

Program Required Quantitation Limit

Laboratories must demonstrate the capability to quantitate analytes in samples at or below the PRQLs given in Table B3-6. Laboratories shall set the concentration of at least one calibration standard below the PRQL. The detailed procedures for PRQL demonstration shall be included in laboratory SOPs.

Completeness

Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Valid results are defined as results that meet the data useability criteria based on application of the Quality

Control Criteria specified in Tables B3-6 and B3-7 and meet the detection limit, calibration, representativeness, and comparability criteria within this section. The Permittees shall require participating laboratories to meet the level of completeness specified in Table B3-6.

Comparability

For SVOC analysis, data generated through analysis of samples from different sites shall be comparable. The Permittees shall require sites to achieve comparability by using standardized SW-846 sample preparation and methods that meet the QAO requirements in Tables B3-6 and B3-7, traceable standards, and by requiring all sites to successfully participate in the PDP. Generator/storage sites may use the most current version of SW-846 if the methods are consistent with QAO requirements. Any changes to SW-846 methodology that results in the elimination of sample preparation or analytical methods in use at generator/storage sites must be addressed as a corrective action to address the comparability of data before and after the SW-846 modification.

Representativeness

Representativeness for SVOC analysis shall be achieved by collecting unbiased samples. Samples must be collected as described in Permit Attachment B1.

B3-8 Total Metal Analysis

Quality Assurance Objectives

The development of DQOs for the program has resulted in the QAOs listed in Table B3-8. The specified QAOs represent the required quality of data necessary to draw valid conclusions regarding program objectives. WAP-required limits, such as the PRQLs associated with metal analysis, are specified to ensure that the analytical data collected satisfy the requirements of all data users. A summary of Quality Control Samples and the associated acceptance criteria for this analysis is provided in Table B3-9. Key data-quality indicators for laboratory measurements are defined below.

Precision

Precision shall be assessed by analyzing laboratory sample duplicates or laboratory matrix spike duplicates, replicate analyses of laboratory-control samples, and PDP blind-audit samples. Results from measurements on these samples must be compared to the criteria listed in Table B3-8. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Accuracy

Accuracy shall be assessed through the analysis of laboratory matrix spikes, PDP blind-audit samples, serial dilutions, interference check samples, and laboratory-control samples. Results from these measurements must be compared to the criterion listed in Table B3-8 and B3-9. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Laboratory blanks and calibration blanks shall be assessed to determine possible laboratory contamination and are evaluated as specified in Table B3-9. These QC measurements will be used to demonstrate acceptable levels of laboratory contamination and to trigger corrective action when control limits are exceeded.

Calibration

Mass Tunes (for Inductively Coupled Plasma-Mass Spectrometry (**ICP-MS**) only), Standards Calibration, Initial Calibration verifications, and Continuing Calibrations will be performed and evaluated using the procedures and criteria specified in Table B3-9 and the SW-846 method (EPA 1996). These criteria will be used to demonstrate acceptable calibration and to trigger corrective action when control limits are exceeded.

Program Required Detection Limits

PRDLs, expressed in units of micrograms per L (µg/L), are the maximum values for instrument detection limits (**IDL**) permissible for program support under the WAP. IDLs must be less than or equal to the PRDL for the method used to quantitate a specific analyte. Any method listed in Table B-5 of the Waste Analysis Plan (Permit Attachment B) may be used if the IDL meets this

criteria. For high concentration samples, an exception to the above requirements may be made in cases where the sample concentration exceeds five times the IDL of the instrument being used. In this case, the analyte concentration may be reported even though the IDL may exceed the PRDL. IDLs shall be determined semiannually (i.e., every six months). Detailed procedures for IDL determination shall be included in laboratory SOPs.

Program Required Quantitation Limit

The Permittees shall require participating laboratories to demonstrate the capability of analyte quantitation at or below the PRQLs in units of mg/kg wet weight (given in Table B3-8). The PRDLs are set an order of magnitude less than the PRQLs (assuming 100 percent solid sample diluted by a factor of 100 during preparation). The Permittees shall require participating laboratories to set the concentration of at least one QC or calibration standard at or below the solution concentration equivalent of the PRQL. Detailed calibration procedures shall be included in site SOPs.

Completeness

Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Valid results are defined as results that meet the data useability criteria based upon application of the Quality Control Criteria specified in Tables B3-8 and B3-9 and meet the detection limit, calibration, representativeness, and comparability criteria within this section. The Permittees shall require participating laboratories to meet the completeness specified in Table B3-8.

Comparability

For metals analysis, data generated through analysis of samples from different sites shall be comparable. Comparability will be achieved by using standardized SW-846 sample preparation and methods that meet QAO requirements in Tables B3-8 and B3-9, demonstrating successful participation in the PDP, and use of traceable standards. Generator/storage sites may use the most recent SW-846 update. Any changes to SW-846 methodology that results in the elimination of sample preparation or analytical methods in use at generator/storage sites must be addressed as a corrective action to address the comparability of data before and after the SW-846 modification.

Representativeness

Representativeness for metals analysis shall be achieved by the collection of unbiased samples and the preparation of samples in the laboratory using representative and unbiased methods. Samples must be collected as described in Permit Attachment B1.

B3-9 Acceptable Knowledge

Acceptable knowledge (**AK**) documentation provides primarily qualitative information that cannot be assessed according to specific data quality goals that are used for analytical techniques. QAOs for analytical results are described in terms of precision, accuracy, completeness, comparability, and representativeness. Appropriate analytical and testing results will be used to confirm the characterization of wastes based on AK ~~acceptable knowledge~~ (Section B4-4 of Permit Attachment B4). To ensure that the AK ~~acceptable knowledge~~ process is consistently applied, the Permittees shall require sites to comply with the following data quality requirements for AK ~~acceptable knowledge~~ documentation:

- Precision - Precision is the agreement among a set of replicate measurements without assumption of the knowledge of a true value. The qualitative determinations, such as compiling and assessing AK ~~acceptable knowledge~~ documentation, do not lend themselves to statistical evaluations of precision. However, the AK ~~acceptable knowledge~~ information will be addressed by the independent review of AK ~~acceptable knowledge~~ information during internal and external audits.

- Accuracy - Accuracy is the degree of agreement between an observed sample result and the true value. The percentage of waste containers which require reassignment to a new waste matrix code and/or designation of different hazardous waste codes based on ~~an~~ the reevaluation of AK ~~acceptable knowledge~~ and sampling and analysis data will be reported as a measure of AK ~~acceptable knowledge~~ accuracy.

- Completeness - Completeness is an assessment of the number of waste streams or number of samples collected to the number of samples determined to be useable through the data validation process. The AK ~~acceptable knowledge~~

record must contain 100 percent of the required information (Permit Attachment B4-3). The useability of the AK ~~acceptable knowledge~~ information will be assessed for completeness during audits.

- Comparability - Data are considered comparable when one set of data can be compared to another set of data. Comparability is ensured through sites meeting the training requirements and complying with the minimum standards outlined for procedures that are used to implement the AK ~~acceptable knowledge~~ process. All sites must assign hazardous waste codes in accordance with Permit Attachment B4-4 and provide this information regarding its waste to other sites who store or generate a similar waste stream.

- Representativeness - Representativeness expresses the degree to which sample data accurately and precisely represent characteristics of a population. Representativeness is a qualitative parameter that will be satisfied by ensuring that the process of obtaining, evaluating, and documenting AK ~~acceptable knowledge~~ information is performed in accordance with the minimum standards established in Permit Attachment B4. Sites also must assess and document the limitations of the AK ~~acceptable knowledge~~ information used to assign hazardous waste codes (e.g., purpose and scope of information, date of publication, type and extent to which waste parameters are addressed).

The Permittees shall require each generator/storage site to comply with the nonconformance notification and reporting requirements of Section B3-14 if the results of confirmatory analytical techniques specified in Permit Attachment B are inconsistent with AK ~~acceptable knowledge~~ documentation.

The Permittees shall require each site to address QC ~~quality control~~ by tracking its performance with regard to the use of AK ~~acceptable knowledge~~ by: 1) assessing the frequency of inconsistencies among information, and 2) documenting the results of AK ~~acceptable knowledge~~ confirmation through radiography, VE ~~visual examination~~, headspace-gas analyses, and solidified waste analyses. In addition, the AK ~~acceptable knowledge~~ process and waste stream documentation must be evaluated through internal assessments by QA ~~quality assurance~~ organizations and assessments by auditors external to the organization (i.e., the Permittees).

B3-10 Data Generation Level ~~Data Review, Validation, and Verification~~ Requirements

The Data Generation Level includes personnel immediately responsible for data generation and review. Data review, validation, and verification at this level involves release via written or electronic signature or electronic approval by the Technical Supervisor and Independent Technical Reviewer, as well as the QA Officer.

The following are minimum requirements for raw data collection and management which the Permittees shall require for each site:

- All raw data shall be signed and dated in reproducible ink by the person generating it. Alternately, unalterable electronic approvals may be used.

- All data must be recorded clearly, legibly, and accurately in field and laboratory records (bench sheets, logbooks), and include applicable sample identification numbers (for sampling and analytical labs).

- All changes to manual data must be lined out, initialed, and dated by the individual making the change. A justification for changing the original data may also be included. Original data must not be obliterated or otherwise disfigured so as not to be readable. Data changes shall only be made by the individual who originally collected the data or an individual authorized to change the data.

- All data must be transferred and reduced from field and laboratory records completely and accurately.

- All field and laboratory records must be maintained as specified in Table B-7 of Attachment B.

- Data must be organized into a standard format for reporting purposes, as outlined in specific sampling and analytical procedures.

- All electronic and video data must be stored appropriately to ensure that waste container data, sample data, and associated QC data are readily retrievable.

B3-10a Batch Data Reports

The Permittees shall require the sites to generate the following Batch Data Reports in either electronic or hard copy format for data validation, verification, and QA activities (if using an Electronic Data Evaluation System, Batch Data Reports need not be generated):

- A Testing Batch Data Report or equivalent includes all data pertaining to radiography or VE for up to 20 waste containers without regard to waste matrix. Table B3-11 lists all of the information required in Testing Batch Data Reports (identified with an "X") and other information that is necessary for data validation, but is optional in Testing Batch Data Reports (identified with an "O").

- A Sampling Batch Data Report or equivalent includes all sample collection data pertaining to a group of no more than 20 headspace gas or homogeneous waste samples that were collected for chemical analysis. Table B3-12 lists all of the information required in Sampling Batch Data Reports (identified with an "X") and other information that is necessary for data validation, but is optional in Sampling Batch Data Reports (identified with an "O").

- An Analytical Batch Data Report or equivalent includes analytical data from the analysis of TRU-mixed waste for batch of up to 20 headspace gas or homogeneous waste samples. Analytical Batch Data Reports or equivalent that contain results for composited headspace gas samples must contain sufficient information to identify the containers that were composited for each composite sample and the sample volume that was taken from each container. Because Analytical Batch Data Reports are generated based on the number of samples analyzed, an Analytical Batch Data Report may contain results that are applicable to more than 20 containers depending on how many composite samples are part of the report, but may not exceed a total of 20 samples analyzed. Table B3-13 lists all of the information required in Analytical Batch Data Reports (identified with an "X") and other information that is necessary for data validation, but is optional in Analytical Batch Data Reports (identified with an "O").

Raw analytical data need not be included in Analytical Batch Data Reports, but must be maintained in the site project files and be readily available for review when requested by the Permittees. Raw data may include all analytical bench sheet and instrumentation readouts for all calibration standard results, sample data, QC samples, sample preparation conditions and logs, sample run logs, and all re-extraction, re-analysis, or dilution information pertaining to the individual samples. Raw data may also include manual calculation records and any qualitative or semi-quantitative data collected for a sample and that has been recorded on a bench sheet or in a log book.

- On-line Batch Data Reports or equivalent contain the combined information from the Sampling Batch Data Report and Analytical Batch Data Report that is relevant to the on-line method used. An On-line Batch Data Report includes samples collected and analyzed within a 12-hour period using the same on-line integrated analysis system.

All Batch Data Reports shall be transmitted by hard copy or electronically (provided a hard copy is available on demand) from the Data Generation Level to the Site Project Level unless an Electronic Data Evaluation System is in use. Site QAPjPs shall specify the individual at the site project office who will receive the data. The Batch Data Report forms used must contain all of the information required by the testing, sampling, and analytical techniques described in Permit Attachments B1 through B6. Batch Data Reports shall be in approved formats, as provided in site-specific documentation. All Batch Data Reports shall be assigned serial numbers, and each page of hard copy reports shall be numbered. The serial number used for Batch Data Reports can be the same as the testing, sampling, or analytical batch number.

Generator/storage sites shall generate and manage records in accordance with the requirements in Permit Attachment B Section B-6a. Generators using onsite characterization facilities shall maintain QA documentation, including raw data, either in the sampling and analytical facility files or site project files in accordance with the document storage requirements in Permit Attachment B Section B-6c and the approved site QAPjP. Generators using contract waste characterization facilities shall ensure that QA documentation, including raw data, is included in the site project files.

Upon request of the Permittees, generator/storage sites using Electronic Data Evaluation Systems must provide Batch Data Reports in hard copy or electronic format. Unless requested, generator/storage sites using Electronic Data Evaluation Systems will maintain all of the information required in a Batch Data Report in their Electronic System, but the Report will not be generated and will be transparent to the user. When using an Electronic System, batches of data, rather than Batch Data Reports, will be subject to data review, validation, and verification. Batches of data contain information for the samples included in Batch Data Reports.

B3-10b Data Evaluation Documentation

Individuals conducting data review, validation, and verification must use checklists that address all of the required items. Checklists must contain or reference tables showing the results of sampling, analytical or on-line batch QC samples, if applicable. Checklists must reflect review of all QC samples and QAO categories in accordance with criteria established in Tables B3-2 through B3-9 (as applicable to the methods validated). The checklists used must contain the releases to document the Data Generation Level review, validation, and verification. Checklists shall be in approved formats, as provided in site-specific documentation. Completed checklists must be forwarded with Batch Data Reports to the project level.

In the case of electronic review, validation, and verification, checklists are not required. See Section B3-13 for documentation requirements for electronic review, validation, and verification.

B3-10c Review of Radiography or Visual Examination Tapes

If discrepancies or inconsistencies are detected during the radiography or VE data review, the generator/storage site will review the radiography videotape or VE tape to verify that the observed physical form of the waste is consistent with the waste stream description provided by the generator and to ensure that no prohibited items are present in the waste. All personnel who review radiography videotapes will be trained to the same standard (per the requirements of this Permit) as radiography operators.

B3-10d Independent Technical Review

One hundred percent of the Batch Data Reports must receive an independent technical review.

This review shall be performed by an individual (other than the data generator) who is qualified to have performed the initial work per the requirements of this Permit. This review validates and verifies all of the work done by the data generator. The independent technical review must be performed before any waste associated with the data reviewed is managed, stored, or disposed at WIPP. The reviewer(s) must release the data via written or electronic signature or electronic approval, and as a consequence ensure the following as applicable:

- Data generation and reduction were conducted in a technically correct manner in accordance with the methods used. Data were reported in the proper units.

- Calculations have been verified by a valid calculation program, a spot check of verified calculation programs, and/or 100 percent check of all hand calculations. Values that are not verifiable to within rounding or significant figure discrepancies must be rectified prior to completion of independent technical review.

- The data have been reviewed for transcription errors.

- The testing, sampling, or analytical data QA documentation is complete and includes, as applicable, raw data, calculation records (both manual and automated), COC forms, calibration records (or references to an available calibration package), QC sample results, and copies or originals of gas canister sample tags.

- QC sample results are within established control limits. Data outside of established control limits will be assigned an appropriate qualifier flag, discussed in the case narrative, and included as appropriate in calculations for completeness.

- Reporting flags (Table B3-14) were assigned correctly.

- Sample holding time and preservation requirements were met, or exceptions documented.

- Radiography tapes have been reviewed as required in Permit Attachment B1 Section B1-3b(2).

- Field sampling records are complete.

- Deviations are documented.

- The data are technically reasonable based on the technique used. (Note that if the generator/storage site does not use an electronic data evaluation system, the Technical Supervisor is responsible for this item and it need not be addressed by the Independent Technical Reviewer.)

- Proper procedures were followed to ensure representative samples of headspace gas and homogeneous solids and soil/gravel were taken.

If an electronic data evaluation system is used, the Independent Technical Reviewer must address all previously identified Nonconformance Reports prior to releasing the data.

B3-10e Technical Supervisor Review

The Technical Supervisor review ensures that the Independent Technical review was performed completely, that the Batch Data Report is complete, and verifies that the results are technically reasonable. This review validates and verifies that the characterization performed in this area is ready for QA Officer review.

One hundred percent of the Batch Data Reports must receive technical supervisory review for each testing batch, sampling batch, analytical batch and on-line batch. The Technical Supervisor review must be performed following Independent Technical Review and before any waste associated with the data reviewed is managed, stored, or disposed at WIPP. The reviewer(s) must release the data via written or electronic signature or electronic approval, and as a consequence ensure the following as applicable:

- The data are technically reasonable based on the technique used.

- All data have received Independent Technical review with the exception of radiography tapes. For radiography tapes, the Technical Supervisor review shall ensure that radiography tapes have received periodic technical review as specified in Section B1-3b(2).

- The testing, sampling, or analytical data QA documentation for Batch Data Reports is complete and includes raw data (as applicable), calculation records, COC forms, calibration records, QC sample results, and original or copies of gas sample canister tags.

- Sample holding time requirements were met, or exceptions documented.

- Field sampling records are complete.

Manual review by the Technical Supervisor is not required if an automated electronic system is used. If an automated electronic system is used, the generator/storage site must assign the responsibility for ensuring that the data are technically reasonable based on the technique used to the Independent Technical Reviewer. See Section B3-13 for additional information regarding electronic data evaluation.

B3-10f QA Officer Review

One hundred percent of the Batch Data Reports must receive QA officer (or designee) review. This review verifies and validates that the characterization results meet the program QA/QC, that instrument performance criteria have been met, and that QAOs for the subject characterization area have been met. The QA Officer release must be performed following release by the Technical Supervisor and before any waste associated with the data reviewed is managed, stored, or disposed at WIPP. This release via written or electronic signature or electronic approval must ensure the following as applicable:

- Independent Technical review has been performed as evidenced by the appropriate release.

- The Technical Supervisor review has been performed as evidenced by the appropriate release.
- QA documentation for Batch Data Report is complete as appropriate for the point of data generation.
- Sampling and analytical QC checks have been properly performed and meet acceptance criteria. QC criteria that were not met are documented.
- QAOs have been met.

Manual review by the QA Officer is not required if an automated electronic system is used. See Section B3-13 for additional information regarding electronic data evaluation.

B3-11 Site Project Level Requirements

The Site Project Level includes personnel at the generator/storage site who are programmatically responsible for the waste and accompanying data prior to shipment to WIPP. Data validation and verification at this level involves scrutiny and release from the Site Project QA Officer (or designee) and the Site Project Manager (or designee).

B3-11a Data Evaluation Documentation

To document the project-level validation and verification, the Permittees shall require each Site Project QA Officer (or designee) to prepare a Site Project QA Officer Summary and the Site Project Manager (or designee) to prepare a Data Validation Summary. These reports may be combined to eliminate redundancy, incorporated into the Site Project QA Officer and Site Project Manager checklists, or be generated by the Electronic Data Evaluation System. The Site Project QA Officer Summary includes a validation checklist for each Batch Data Report, which must be sufficiently detailed to validate all aspects of a Batch Data Report that affect data quality. The Data Validation Summary provides confirmation that all data have been validated in accordance with the site QAPjP. The Data Validation Summary must identify the Batch Data Report reviewed, describe how the validation was performed and whether or not problems were detected, and include a statement indicating that all data are acceptable.

B3-11b Site Project QA Officer Review

One hundred percent of the Batch Data Reports must receive Site Project QA Officer review. The Site Project QA Officer release must be performed following release by the QA Officer and before any waste associated with the data reviewed is managed, stored, or disposed at WIPP. This release via written or electronic signature or electronic approval must ensure the following as applicable:

- Batch Data Reports are complete and data are properly reported (i.e., data are reported in correct units, and, if applicable, with correct qualifying flags).

- Sampling batch QC checks (e.g., equipment blanks, field duplicates, field reference standards) were properly performed, meet the established QAOs, and are within established data useability criteria.

- Testing batch QC checks (e.g., replicate scans, measurement system checks) were properly performed. Radiography data are complete and acceptable based on evidence of videotape review as specified in B1-3b(2).

- Analytical batch QC checks (e.g., laboratory duplicates, laboratory blanks, matrix spikes, matrix spike duplicates, laboratory control samples) were properly performed and meet the established QAOs and are within established data useability criteria.

- On-line batch QC checks (e.g., field blanks, on-line blanks, on-line duplicates, on-line control samples) were properly performed and meet the established QAOs and are within established data useability criteria.

- The ITR has verified that proper procedures were followed to ensure representative samples of headspace gas and homogeneous solids and soil/gravel were taken.

Manual review by the Site Project QA Officer is not required if an automated electronic system is used. If an automated electronic system is used, the Site Project QA Officer must ensure

that any required nonconformance reports are prepared in accordance with Section B3-14. See Section B3-13 for additional information regarding electronic data evaluation.

B3-11c Site Project Manager Review

One hundred percent of the Batch Data Reports must have Site Project Manager release. The Site Project Manager release must be performed following the release of the Site Project QA Officer and before any waste associated with the data reviewed is managed, stored, or disposed at WIPP. This release via written or electronic signature or electronic approval must ensure the following:

- Data Generation Level Technical Supervisor, Independent Technical, and QA Officer (or designee) review, validation, and verification have been performed as evidenced by completed review checklists and by the appropriate releases.

- Verify that data are within established data assessment criteria and meet all applicable QAOs.

Manual review by the Site Project Manager is not required if an automated electronic system is used. If an automated electronic system is used, the Site Project Manager must release the Electronic Data Evaluation Report. See Section B3-13 for additional information regarding electronic data evaluation.

B3-11d Sample Release

Once the data have received project-level validation and verification or when the Site Project Manager decides the sample no longer needs to be retained, the Site Project Manager must ensure that the laboratory is notified. Samples must be retained by the laboratory until this notification is received. Gas sample canisters may then be released from storage for cleaning, recertification, and subsequent reuse. Sample tags must be removed and retained in the project files before recycling the canisters. If the Site Project Manager requests that samples or canisters be retained for future use (e.g., an experimental holding time study), the same sample identification and COC forms shall be used and cross-referenced to a document which specifies the purpose for sample or canister retention.

B3-11e Data Reconciliation

The Permittees shall require each Site Project Manager to ensure that all data generated and used in decision making meet the DQOs provided in Section B-4 of Permit Attachment B. To do so, the Site Project Manager must assess whether data of sufficient type, quality, and quantity have been collected. The Site Project Manager must determine if the variability of the data set is small enough to provide the required confidence in the results. The Site Project Manager must also determine if, based on the desired error rates and confidence levels, a sufficient number of valid data points have been determined (as established by the associated completeness rate for each sampling and analytical process). In addition, the Site Project Manager must document that containers were randomly selected in accordance with Permit Attachment B2.

For each waste stream characterized, the Permittees shall require each Site Project Manager to determine if sufficient data have been collected to determine the following WAP-required waste parameters:

- Waste matrix code
- Waste material parameter weights
- If each waste container of waste contains TRU radioactive waste
- Mean concentrations, 90 percent (%) upper confidence limit (**UCL_{90}**) for the mean concentrations, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream (if applicable)
- The potential flammability of TRU waste headspace gases
- Mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream

- Whether the waste stream exhibits a toxicity characteristic (**TC**) under 40 CFR Part 261, Subpart C

- Whether the waste stream can be classified as hazardous or nonhazardous at the 90-percent confidence level

- Whether a sufficient number of waste containers have been visually examined (as a QC check on radiography) to determine with a reasonable level of certainty that the UCL_{90} for the miscertification rate is less than 14 percent (if applicable)

- Whether all TICs were appropriately identified and reported in accordance with the requirements of Permit Attachment B Section B-3a(3)

- Whether the overall completeness, comparability, and representativeness QAOs were met for each of the analytical and testing procedures as specified in Sections B3-2 through B3-9

- Whether the PRQLs for all analyses were met prior to submittal of a Waste Stream Profile Form for a waste stream or waste stream lot

If the Site Project Manager determines that insufficient data have been collected to make the determinations listed above, additional data collection efforts must be undertaken. The reconciliation of a waste stream shall be performed prior to submittal of the Waste Stream Profile Form for that waste stream. For subsequent shipments, the Site Project Manager shall reconcile data on all waste containers prior to shipment to WIPP.

The statistical procedure presented in Permit Attachment B2 shall be used by Site Project Managers to evaluate and report waste characterization data from the analysis of homogeneous solids and soil/gravel. The procedure, which calculates UCL_{90} values, shall be used to assess compliance with the DQOs in Permit Attachment B Section B-4 as well as with Resource Conservation and Recovery Act (**RCRA**) regulations. The procedure must be applied to all laboratory analytical data for total VOCs, total SVOCs, and total metals. For RCRA regulatory compliance (40 CFR § 261.24), data from the analysis of the target metals and organic compounds shall be expressed as toxicity characteristic leaching procedure (**TCLP**)

values or results may also be compared to the TC levels expressed as total values. These total values will be considered the regulatory threshold limit (**RTL**) values for the WAP. RTL values are obtained by calculating the weight/weight concentration (in the solid) of a TC analyte that would give the regulatory weight/volume concentration (in the TCLP extract), assuming 100-percent analyte dissolution.

If continued waste characterization reveal discrepancies that identify different hazardous waste codes or indicates that the waste belongs to a different waste stream, the waste will be redefined to a separate waste stream and a new Waste Stream Profile Form submitted.

B3-11f Waste Stream Profile Form

Once a waste stream is fully characterized, the Site Project Manager shall submit to the Permittees a Waste Stream Profile Form (Figure B3-1) accompanied by the Characterization Information Summary for that waste stream. The Waste Stream Profile Form will be used as the basis for acceptance of waste characterization information on TRU mixed wastes to be disposed of at the WIPP.

The Waste Stream Profile Form (Figure B3-1) includes the following information :

- Generator/storage site name
- Generator/storage site U.S. Environmental Protection Agency (**EPA**) Identification (**ID**) Number
- Date of audit report approval by New Mexico Environment Department (**NMED**) (if obtained)
- Original generator of waste stream
- The waste stream WIPP identification number
- A description of the waste stream

- Summary Category Group
- Waste Matrix Code Group
- Waste stream name
- Applicable EPA hazardous waste codes
- Applicable Transuranic Content (**TRUCON**) codes
- A listing of AK documentation used to identify the waste stream
- The waste characterization procedures used and the reference and date of the procedure.
- Certification signature of Site Project Manager, name, title, and date signed

B3-11g Characterization Information Summary

The Characterization Information Summary includes the following elements:

- Data reconciliation with DQOs.
- Headspace gas summary data listing the identification numbers of samples used in the statistical reduction, the maximum, mean, standard deviation, UCL_{90}, RTL, and associated EPA hazardous waste codes that must be applied to the waste stream.
- Total metal, VOC, and SVOC analytical results for homogeneous solids and soil/gravel (if applicable).
- TIC listing and evaluation and verification that AK was confirmed.
- Radiography and VE summary to document that all prohibited items are absent

in the waste and to confirm AK.

- A complete listing of all container identification numbers used to generate the WSPF, cross referenced to each Batch Data Report.

- Complete AK summary including waste stream name, waste stream identification number, point of generation, waste stream volume (current and projected), generation dates, TRUCON codes, Summary Category Group, Waste Matrix Code(s), and Waste Matrix Code Group, other Transuranic Waste Baseline Inventory Report (**TWBIR**) information, waste stream description, areas of operation, generating processes, RCRA determinations, radionuclide information, and all references used to generate the AK summary, and any other information required by Permit Attachment B4, Section B4-2b.

B3-11h Report Consistency

The Site Project QA Officer must verify that the Waste Stream Profile Form and Characterization Information Summary are consistent with information reported in Batch Data Reports. This verification may be conducted electronically for sites using an Electronic Data Evaluation System.

B3-11i WIPP Waste Information System

All generator/storage sites planning to ship TRU mixed waste to WIPP will supply the required data to the WWIS as discussed in Permit Attachment B Section B-6b.

B3-11j Land Disposal Restriction Notice Information

TRU mixed waste is exempt from the Land Disposal Restrictions (**LDR**) by the Land Withdrawal Act Amendment (Public Law 104-201). This amendment states that WIPP "Waste is exempted from treatment standards promulgated pursuant to section 3004(m) of the Solid Waste Disposal Act (42 U.S. C. 6924(m)) and shall not be subjected to the Land Disposal prohibitions in section 3004(d), (e), (f), and (g) of the Solid Waste Disposal Act." Therefore, with the initial shipment of a TRU mixed waste stream, the Site Project Manager shall provide the Permittees with a written

notice in accordance with 20.4.1.800 New Mexico Administrative Code (**NMAC**) (incorporating 40 CFR §268.7(a)(4)), including the following information:

- EPA Hazardous Waste Number(s) and Manifest Numbers of first shipment of a mixed waste stream.
- Statement: "This waste is not prohibited from land disposal."
- Date the waste is subject to prohibition.

This information is required by column "268.7(a)(4)" of the "Generator Paperwork Requirements Table" in 20.4.1.800 NMAC (incorporating 40 CFR 268.7(a)(4)). Note that item "5" from the "Generator Paperwork Requirements Table" is not applicable because waste analysis data are provided electronically via the WIPP Waste Information System (**WWIS**) and item "7" is not applicable because WIPP is exempted from the treatment standards.

B3-11k Uniform Hazardous Waste Manifest

The Site Project Manager must ensure that a Uniform Hazardous Waste Manifest accompanies any waste shipments to WIPP.

B3-12 Permittee Level Requirements

The Permittee Level includes WIPP personnel responsible for the audit program, review of data prior to shipment of waste to WIPP, and receipt of waste at WIPP. Waste screening occurs both prior to transporting the TRU mixed waste to the WIPP facility and after the TRU mixed waste shipment arrives but before it is emplaced.

B3-12a Permittee Audit Program

General requirements for the Permittees' Audit and Surveillance Program are found in Section B-5 of Permit Attachment B, while specific requirements can be found in Permit Attachment B6. One function of the Permittees' Audit and Surveillance Program is to conduct an inventory check of the Batch Data Reports to verify completeness, which may be done manually or

electronically.

B3-12b Waste Stream Profile Form and Characterization Information Summary Approval

Submittal of the Waste Stream Profile Form and accompanying Characterization Information Summary to the Permittees provides notification that the generator/storage site considers that the waste stream (identified by the waste stream identification number) has been adequately characterized for disposal prior to shipment to WIPP. The Permittees will then examine the following:

- Waste stream description
- Waste Matrix Code/Waste Matrix Code Group
- Summary Category Groups
- Waste characterization results
- AK summary documentation
- Characterization methods compared to WAP requirements to ensure that only approved methods were used for waste characterization
- Carlsbad Field Office (**CBFO**) certification
- EPA hazardous waste code(s) correctly assigned
- Waste codes compared to the Permittees' RCRA Part A Application to ensure all constituents are approved for management, storage, or disposal at WIPP. Some of the waste may also be identified by unique state hazardous waste codes. These wastes are acceptable at the WIPP as long as the remaining criteria are met.
- TSDF-WAC compliance has been met by the generator/storage site.

- The Characterization Information Summary verifies that the waste has been evaluated for the characteristics of ignitability, corrosivity, and reactivity.

- Final verification of waste compatibility has been performed using Appendix C1 of the WIPP RCRA Part B Permit Application (DOE, 1997), the Compatibility Study.

If the Permittees determine that the characterization information is adequate, the Waste Stream Profile Form will be approved and the originating site will be notified in writing of the approval. Prior to the first shipment of containers from the approved waste stream, the Permittees will provide the approved Waste Stream Profile Form and accompanying Characterization Information Summary to NMED.

If the data comparison indicates that analyzed containers have hazardous wastes not present on the Waste Stream Profile Form, or a different Waste Matrix Code applies, the Waste Stream Profile Form is in error and shall be resubmitted. The Permittees will not manage, store, or dispose of the waste stream until all discrepancies are resolved.

For subsequent shipments, the generator/storage site will also transmit the data on a container basis via the WWIS prior to shipment of that container. This data submittal can occur at any time as the data are being collected, but will be complete for each container prior to shipment. The WWIS will conduct internal edit/limit checks based on the approved Waste Stream Profile Form. The Permittees will compare ongoing sampling/analysis characterization data obtained and submitted via the WWIS to the approved Waste Stream Profile Form. If this comparison shows that containers have hazardous wastes not reported on the Waste Stream Profile Form, or a different Waste Matrix Code applies, the data are rejected and the waste containers are not accepted for shipment. The Permittees will not manage, store, or dispose of the waste until all discrepancies are resolved.

Prior to waste disposal, the Permittees will notify NMED in writing of any discrepancies identified during Waste Stream Profile Form review and the resulting resolution.

The Permittees must also ensure that data of sufficient type, quality, and quantity are collected to meet WAP DQOs. The Permittees will ensure sufficient data have been collected to determine the following:

- The concentration of VOC constituents in the headspace in the total waste inventory has not exceeded the environment performance standards of 20.4.1.500 NMAC (incorporating 40 CFR §264.601(c)) as specified in Module IV;

- Whether waste streams proposed for disposal in WIPP have been adequately characterized; and

- Whether data support the information contained in the WIPP RCRA permit application.

B3-12c Review of Shipping Records

The Permittees will complete the following after the waste shipment has arrived: 1) a determination of the completeness and accuracy of the EPA Uniform Hazardous Waste Manifest; 2) a determination of waste shipment completeness; 3) a determination of land disposal restriction notice completeness (once per waste stream); and 4) resolution of waste shipment irregularities, as applicable. Only those waste containers that pass all waste screening determinations will be emplaced at WIPP.

Upon receipt of a TRU mixed waste shipment, the Permittees will make a determination of EPA Uniform Hazardous Waste Manifest completeness and accuracy and sign the manifest to allow the driver to depart. The Uniform Hazardous Waste Manifest must include the following information:

- Generator/storage site name and EPA ID number

- Generator/storage site contact name and phone number

- Quantity of waste

- List of the hazardous waste codes in the shipment

- Listing of all shipping container IDs (Transuranic Packaging Transporter-Model II (**TRUPACT-II**) serial number)

- Signature of authorized generator representative

Once the TRUPACT-II has been opened, the Permittees will verify the following items and document the results on a Waste Receipt Checklist:

- Containers included in the shipment are those for which approved shipping data already exist in the WWIS as specified in Table B-8 of Attachment B. For standard waste boxes (**SWBs**) and ten drum overpacks (**TDOPs**), this check will include comparing the barcode on the container with the shipping papers and the data on the WWIS Shipment Summary Report. For 7-pack assemblies, one of the seven container barcodes will be read by the barcode reader and compared to the assembly information for this container on the WWIS Shipment Summary Report. This will automatically identify the remaining six containers in the assembly. This process enables the Permittees to identify all of the containers in the assembly with minimum exposure.

- Number and type of containers match the information in the WWIS

- Containers are free of defects

- Waste Stream Identification Number for each container (or one container in 7-pack assemblies) matches information in WWIS

- Hazardous waste codes for each container (or one container in 7-pack assemblies) matches information in WWIS

- Certification Data for each container (or one container in 7-pack assemblies) matches information in WWIS

- Shipping Data for each container matches (or one container in 7-pack assemblies) information in WWIS (Assembly numbers, ship date, shipping category, etc.)

- Data on the WWIS Shipment Summary Report for the shipment matches the actual shipping papers (including the EPA Uniform Hazardous Waste Manifest).

The Permittees will also review the LDR notice for accuracy and completeness (once per waste stream.)

In addition, radiography videotapes will be selected randomly for at least one percent of containers received at WIPP and will be reviewed by the Permittees and compared to radiographic data forms. All personnel who review radiography videotapes will be trained to the same standard as radiography operators.

Discrepancies will be identified during manifest examination and container bar-code WWIS data comparison. A manifest discrepancy is a difference between the quantity or type of hazardous waste designated on the manifest and the quantity or type of hazardous waste the WIPP facility actually receives. The Permittees will contact the generator/storage site technical contact (as listed on the manifest) to resolve the discrepancy. If the discrepancy is identified prior to removal of the containers from the TRUPACT-II, the waste will be retained in the parking area until the discrepancy is resolved. If the discrepancy is identified after the waste containers are removed from the TRUPACT-II, the waste will be retained in the Waste Handling Building (**WHB**) until the discrepancy is resolved. Errors on the manifest can be corrected by the WIPP facility with verbal (followed by mandatory written) concurrence by the generator/storage site technical contact. All discrepancies that are unresolved within fifteen (15) days of receiving the waste will be immediately reported to the NMED in a letter describing the discrepancy, discrepancy resolution, and including a copy of the manifest. If the manifest discrepancies have not been resolved within thirty (30) days of waste receipt, the shipment will be returned to the generator/storage facility. If waste containers are returned to the generator/storage site, the Permittees may prepare a new EPA Uniform Hazardous Waste Manifest.

The Permittees will document the return of containers in the WWIS and change the WWIS data to indicate the current status of the container(s). The reason for the WWIS data change and the record of the WWIS data change will be maintained in the change log of the WWIS, which will provide an auditable record of the returned shipment.

B3-13 Electronic Data Evaluation

Generator/storage sites have the option to complete the review, validation, and verification responsibilities of the Technical Supervisor, QA Officer, Site Project QA Officer, and Site Project Manager using an electronic system. The electronic system must address the following items corresponding to requirements in Sections B3-10d through B3-11b:

- Proper data generation, reduction, and reporting
- Correct calculations
- QA documentation is complete
- QC sample results are within limits
- Reporting flags were assigned correctly
- Holding time and preservation requirements were met
- Radiography tapes have been reviewed as required
- On-line field sampling records are complete
- QAOs were met
- Data supporting Batch Data Reports are complete

If using an electronic system, generator/storage sites must maintain the information required in Tables B3-11, B3-12, and B3-13 either electronically or through a combination of written and electronic records.

The electronic system must be developed and tested in compliance with “Quality Assurance Requirements of Computer Software for Nuclear Applications (NQA-2)” (ASME, 1989). Prior to implementation of the electronic system, the generator/storage site must prepare the following items (required by NQA-2), which will be subject to the audit process:

- Software Quality Assurance Plan
- Software Requirements Documentation

- Software Design and Implementation Documentation
- Software Verification and Validation Documentation
- User Documentation

The purpose of these documents is to ensure that the electronic system is functioning properly prior to certification for use. The documents must address software QA checks employed to ensure the system is functioning properly. The electronic system must be operated with a manual system for a limited time to ensure the electronic system is operating properly if the system has not been previously certified by the Permittees. If a generator/storage site does not have an existing manual data review, validation, and verification system that has been approved via audit, they may use an electronic system that has been previously certified at another generator/storage site in lieu of operating both manual and electronic systems. The generator/storage site must develop SOPs for operations related to use of the electronic system or have documented training in the use of the system. The generator/storage sites will propose audit checklist items specific to the generator/storage site's electronic system. Prior to certification of the electronic system for use, CBFO will conduct an audit in accordance with Permit Attachment B Section B-5 and including the audit checklist items proposed by the generator/ storage site and approved by the NMED. The audit process will include approval of the final audit report by NMED.

The electronic system must include a Change Log/Report, which will contain the following items:

- Changed by
- Fields changed
- Reason for the change
- Change made

The Change Log/Report must be available upon request by the Permittees.

Following completion of the automated electronic review, validation, and verification activities, an Electronic Data Evaluation Report will be issued. This report may be electronic or hard copy format as required by site-specific procedures. The Electronic Data Evaluation Report will reference the data evaluated, any incomplete information resulting in inability to complete the

electronic data evaluation, and any nonconforming data requiring follow up under the nonconformance process discussed in Section B3-14. The Electronic Data Evaluation Report and accompanying results will be released via written or electronic signature or electronic approval by the Site Project Manager before any waste associated with the data reviewed is managed, stored, or disposed at WIPP.

~~Procedures shall be developed for the review, validation, and verification of data at the data generation level; the validation and verification of data at the project level; and the verification of data at the Permittees' level. Data review determines if raw data have been properly collected and ensures raw data are properly reduced. Data validation confirms that the data reported satisfy the requirements of this WAP and is accompanied by signature release. Data verification authenticates that data as presented represent the sampling and analysis activities as performed and have been subject to the appropriate levels of data review. The procedures presented in this section ensure that WAP records furnish documentary evidence of quality.~~

~~The Permittees shall require the sites to generate the following Batch Data Reports for data validation, verification, and quality assurance activities:~~

- ~~A Testing Batch Data Report or equivalent includes all data pertaining to radiography or visual examination for up to 20 waste containers without regard to waste matrix. Table B3-11 lists all of the information required in Testing Batch Data Reports (identified with an "X") and other information that is necessary for data validation, but is optional in Testing Batch Data Reports (identified with an"O").~~

- ~~A Sampling Batch Data Report or equivalent includes all sample collection data pertaining to a group of no more than 20 headspace gas or homogeneous waste samples that were collected for chemical analysis. Table B3-12 lists all of the information required in Sampling Batch Data Reports (identified with an "X") and other information that is necessary for data validation, but is optional in Testing Batch Data Reports (identified with an"O").~~

- ~~An Analytical Batch Data Report or equivalent includes analytical data from the analysis of TRU-mixed waste for batch of up to 20 headspace gas or homogeneous waste samples. Analytical Batch Data Reports or equivalent that contain results for~~

composited headspace gas samples must contain sufficient information to identify the containers that were composited for each composite sample and the sample volume that was taken from each waste container. Because Analytical Batch Data Reports are generated based on the number of samples analyzed, an Analytical Batch Data Report may contain results that are applicable to more than 20 containers depending on how many composite samples are part of the report, but may not exceed a total of 20 samples analyzed. Table B3-13 lists all of the information required in Sampling Batch Data Reports (identified with an "X") and other information that is necessary for data validation, but is optional in Testing Batch Data Reports (identified with an"O").

- Raw analytical data need not be included in Analytical Batch Data Reports, but must be maintained in the site project files and be readily available for review upon request. Raw data may include all analytical bench sheet and instrumentation readouts for all calibration standard results, sample data, QC samples, sample preparation conditions and logs, sample run logs, and all re-extraction, re-analysis, or dilution information pertaining to the individual samples. Raw data may also include calculation records and any qualitative or semi-quantitative data collected for a sample and that has been recorded on a bench sheet or in a log book.

- On-line Batch Data Reports or equivalent contain the combined information from the Sampling Batch Data Report and Analytical Batch Data Report that is relevant to the on-line method used.

B3-10a Data Generation Level

The following are minimum requirements for raw data collection and management which the Permittees shall require for each site:

- All raw data shall be signed and dated in reproducible ink by the person generating it. Alternately, unalterable electronic signatures may be used.

- All data must be recorded clearly, legibly, and accurately in field and laboratory records (bench sheets, logbooks), and include applicable sample identification numbers(for sampling and analytical labs).

- All changes to original data must be lined out, initialed, and dated by the individual making the change. A justification for changing the original data may also be included. Original data must not be obliterated or otherwise disfigured so as not to be readable. Data changes shall only be made by the individual who originally collected the data or an individual authorized to change the data.

- All data must be transferred and reduced from field and laboratory records completely and accurately.

- All field and laboratory records must be maintained as specified in Table B-7 of Attachment B.

- Data must be organized into a standard format for reporting purposes (Batch Data Report), as outlined in specific sampling and analytical procedures.

- All electronic and video data must be stored appropriately to ensure that waste container, sample, and associated QC data are readily retrievable.

Data review, validation, and verification at this level involves scrutiny and signature release from qualified independent technical reviewer(s)[+], technical supervisors(s), and a QA representative, as specified below. Individuals conducting this data review, validation, and verification must use checklists that address all of the items included in this section. Checklists must contain or reference tables showing the results of sampling, analytical or on-line batch QC samples, if applicable. Checklists must reflect review of all QC samples and quality assurance objective categories in accordance with criteria established in Tables B3-2 through B3-9 (as applicable to the methods validated). Completed checklists must be forwarded Batch Data Reports to the project level. Analytical raw data must be available and reviewed by the data generation level reviewer.

B3-10a(1) Independent Technical Review

The independent technical review ensures by review of raw data that data generation and reduction are technically correct; calculations are verified correct; deviations are documented;

[+]Independent technical review is performed by a competent individual who is not directly responsible for performing the work. (W-44)

and QA/QC results are complete, documented correctly, and compared against WAP criteria. This review validates and verifies all of the work done by the originator.

One hundred percent of the Batch Data Reports must receive an independent technical review. This review shall be performed by an individual other than the data generator who is qualified to have performed the initial work. The independent technical review must be performed as soon as practicably possible in order to determine and correct negative quality trends in the sampling or analytical process. However at a minimum, the independent technical review must be performed before any waste associated with the data reviewed is managed, stored, or disposed at WIPP. The reviewer(s) must release the data as evidenced by signature, and as a consequence ensure the following:

- Data generation and reduction were conducted in a technically correct manner in accordance with the methods used (procedure with revision). Data were reported in the proper units and correct number of significant figures.

- Calculations have been verified by a valid calculation program, a spot check of verified calculation programs, and/or 100 percent check of all hand calculations. Values that are not verifiable to within rounding or significant difference discrepancies must be rectified prior to completion of independent technical review.

- The data have been reviewed for transcription errors.

- The testing, sampling, or analytical data QA documentation for Batch Data Reports is complete and includes, as applicable, raw data, calculation records, chain-of-custody (**COC**) forms, calibration records (or references to an available calibration package), QC sample results, and copies or originals of gas canister sample tags . Corrective action will be taken to ensure that all Batch Data Reports are complete and include all necessary raw data prior to completion of the independent technical review.

- QC sample results are within established control limits, and if not, the data have been appropriately qualified in accordance with data useability criteria. Data outside of established control limits will be qualified as appropriate, assigned an

appropriate qualifier flag, discussed in the case narrative, and included as appropriate in calculations for completeness .

- Reporting flags (Table B3-14) were assigned correctly.

- Sample holding time and preservation requirements were met, or exceptions documented.

- Radiography tapes have been reviewed (independent observation) on a waste container basis at a minimum of once per testing batch or once per day of operation, whichever is less frequent (Attachment B1, Section B1-3b(2)). The radiography tape will be reviewed against the data reported on the radiography form to ensure that the data are correct and complete.

- Field sampling records are complete. Incomplete or incorrect field sampling records will be subject to resubmittal prior to completion of the independent technical review.

B3-10a(2) Technical Supervisor Review

The technical supervisor review ensures that the independent technical review was performed completely, that the Batch Data Report is complete, and verifies that the results are technically reasonable. This review validates and verifies that the characterization performed in this area is ready for QA office review.

One hundred percent of the batch data reports must receive technical supervisory signature release for each testing batch, sampling batch, analytical batch and on-line batch. The technical supervisory signature release must occur as soon as practicably possible after the independent technical review in order to determine and correct negative quality trends in the sampling or analytical process. However at a minimum, the technical supervisory signature release must be performed before any waste associated with the data reviewed is managed, stored, or disposed at WIPP. This release must ensure the following:

- The data are technically reasonable based on the technique used.

- All data have received independent technical review with the exception of

radiography tapes, which shall receive periodic technical review as specified in Attachment B1, Section B1-3b(2).

- The testing, sampling, or analytical data QA documentation for Batch Data Reports is complete and includes raw data (as applicable), calculation records, COC forms, calibration records, QC sample results, and original or copies of gas sample canister tags.

- Sample holding time requirements were met, or exceptions documented.

- Field sampling records are complete.

B3-10a(3) QA Officer Review

The data generation level QA review ensures that Batch Data Report is complete, that QC checks meet the acceptance criteria, and that the appropriate QAOs have been met. This review verifies and validates that the characterization results meet the program QA/QC, that instrument performance criteria have been met, and that QAOs for the subject characterization area have been met.

The Permittees shall require for each site that one hundred percent of the batch data reports receive QA officer (or designee) signature release. The QA Officer signature release must occur as soon as practicably possible after the technical supervisory signature release in order to determine and correct negative quality trends in the sampling or analytical process. However at a minimum, the QA Officer signature release must be performed before any waste associated with the data reviewed is managed, stored, or disposed at WIPP. This release must ensure the following:

- Independent technical and technical supervisory reviews have been performed as evidenced by the appropriate signature releases.

- QA documentation for Batch Data Report is complete as appropriate for the point of data generation.

- ~~Sampling and analytical QC checks have been properly performed. QC criteria that were not met are documented.~~

- QAOs have been met according to the methods outlined in Section B3-11.

B3-10b Project Level

Data validation and verification at this level involves scrutiny and signature release from the Site Project Manager (or designee) and the Site Project QA Officer (or designee). The Permittees shall require each site to meet the following minimum requirements for each waste container. Any nonconformance identified during this process shall be documented on a nonconformance report (Section B3-13).

The Site Project Manager and Site Project QA Officer shall ensure that a repeat of the data generation level review, validation, and verification is performed on the data for a minimum of one randomly chosen waste container quarterly (every three months). This exercise will document that the data generation level review, validation, and verification is being performed according to implementing procedures.

B3-10b(1) Site Project QA Officer

The Site Project QA Officer review ensures that the Batch Data Reports received from the data generation level is complete, validates and verifies that the QC checks were done properly and meet program criteria, and ensures that the QAOs have been met.

One hundred percent of the Batch Data Reports must receive Site Project QA Officer signature release. The Site Project QA Officer signature release must occur as soon as practicably possible in order to determine and correct negative quality trends in the sampling or analytical process. However at a minimum, the Site Project QA Officer signature release must be performed before any waste associated with the data reviewed is managed, stored, or disposed at WIPP. This signature release must ensure the following:

- Batch Data Reports are complete and data are properly reported (i.e., data are reported in correct units, with correct significant figures, and with correct qualifying flags).

- Sampling batch QC checks (e.g., equipment blanks, field duplicates, field reference standards) were properly performed, and meet the established QAOs

and are within established data useability criteria.

- Testing batch QC checks (e.g., replicate scans, measurement system checks,) were properly performed. Radiography data are complete and acceptable based on evidence of videotape review of one waste container per day or once per testing batch, whichever is less frequent, as specified in B1-3b(2).

- Analytical batch QC checks (e.g., laboratory duplicates, laboratory blanks, matrix spikes, matrix spike duplicates, laboratory control samples) were properly performed and meet the established QAOs and are within established data useability criteria.

- On-line batch QC checks (e.g., field blanks, on-line blanks, on-line duplicates, on-line control samples) were properly performed and meet the established QAOs and are within established data useability criteria.

- Proper procedures were followed to ensure representative samples of headspace gas and homogenous solids and soil/gravel were taken.

B3-10b(2) Site Project Manager

One hundred percent of the Batch Data Reports must have Site Project Manager signature release. The Site Project Manager signature release must occur as soon as practicably possible after the Site Project QA Officer signature release in order to determine and correct negative quality trends in the sampling or analytical process. However at a minimum, the Site Project Manager signature release must be performed before any waste associated with the data reviewed is managed, stored, or disposed at WIPP. This signature release must ensure the following:

- Data generation level independent technical, technical supervisory, and QA officer (or designee) review, validation, and verification have been performed as evidenced completed review checklists and by the appropriate signature releases.

- Batch data review checklists are complete.

- Batch Data Reports are complete and data are properly reported (e.g., data are reported in the correct units, with the correct number of significant figures, and with qualifying flags).

- Verify that data are within established data assessment criteria and meet all applicable QAOs (Section B3-11).

B3-10b(3) Prepare Site Project QA Officer Summary and Data Validation Summary

To document the project-level validation and verification described above, the Permittees shall require each Site Project QA Officer (or designee) to prepare a Site Project QA Officer Summary and the Site Project Manager (or designee) to prepare a Data Validation Summary. These reports may be combined to eliminate redundancy, and may be included with the Site Project QA Officer and Site Project Manager checklists. The Site Project QA Officer Summary includes, a validation checklist for each Batch Data Report . Checklists for the Site Project QA Officer Summary must be sufficiently detailed to validate all aspects of a Batch Data Report that affect data quality. The Data Validation Summary provides confirmation that, on a per waste container basis as evidenced by Batch Data Report reviews, all data have been validated in accordance with the site QAPjP. The Data Validation Summary must identify each Batch Data Report reviewed (including all waste container numbers), describe how the validation was performed and whether or not problems were detected (e.g., nonconformance reports), and include a statement indicating that all data are acceptable. Summaries must include release signatures.

Once the data have received project-level validation and verification or when the Site Project Manager decides the sample no longer needs to be retained, the Site Project Manager must ensure that the laboratory is notified. Samples must be retained by the laboratory until this notification is received. Gas sample canisters may then be released from storage for cleaning, recertification, and subsequent reuse. Sample tags must be removed and retained in the project files before recycling the canisters. If the Site Project Manager requests that samples or canisters be retained for future use (e.g., an experimental holding time study), the same sample identification and COC forms shall be used and cross-referenced to a document which specifies the purpose for sample or canister retention.

B3-10b(4) Prepare Waste Stream Characterization Package

In the event the Permittees request detailed information on a waste stream, the site will provide a Waste Stream Characterization Package. The Site Project Manager can require each characterization area, data generation level technical supervisor, and QA officer to assist in preparation and review of the Waste Stream Characterization Package (Section B3-12b(2)) as necessary to ensure the package will support the Site Project Manger's waste characterization determinations.

B3-10c Permittees' Level

The final level of data verification occurs at the Permittee level and must, at a minimum, consist of an inventory check of the Batch Data Reports to verify completeness. The Permittees are responsible for the verification that Batch Data Reports include the following:

- Project-level signature releases
- Listing of all waste containers being presented in the report
- Listing of all testing, sampling, and analytical batch numbers associated with each waste container being reported in the package
- Analytical Batch Data Report case narratives
- Site Project QA Officer Summary
- Data Validation Summary
- Complete summarized qualitative and quantitative data for all waste containers with data flags and qualifiers.

For each Waste Stream Profile Form (**WSPF**) submitted for approval, the Permittees must verify that each submittal (i.e., WSPF and Characterization Information Summary) is complete and notify the originating site in writing of the WSPF approval. The Permittees will maintain the data as appropriate for use in the regulatory compliance programs. At a minimum the verification must:

- ~~Ensure the correct assignment of the waste stream description, Waste Matrix Code Group, Summary Category Groups, and EPA hazardous waste codes~~

- ~~Reconcile data~~

- ~~Contain summarized results of characterization~~

- ~~List the methods used for characterization~~

~~For subsequent shipments made after the initial WSPF approval, the verification will also include WWIS internal limit checks (Attachment B, Section B-4b(1)(i)).~~

~~B3-11 Reconciliation with Data Quality Objectives~~

~~Reconciling the results of waste testing and analysis with the DQOs provides a way to ensure that data will be of adequate quality to support the regulatory compliance programs. Reconciliation with the DQOs will take place at both the project level and the Permittees' level. At the project level, reconciliation will be performed by the Site Project Manager; at the Permittees' level, reconciliation will be performed as described below.~~

~~B3-11a Reconciliation at the Project Level~~

~~The Permittees shall require each Site Project Manager to ensure that all data generated and used in decision making meet the DQOs provided in Section B-4a(1) of Permit Attachment B. To do so, the Site Project Manager must assess whether data of sufficient type, quality, and quantity have been collected. The Site Project Manager must determine if the variability of the data set is small enough to provide the required confidence in the results. The Site Project Manager must also determine if, based on the desired error rates and confidence levels, a sufficient number of valid data points have been determined (as established by the associated completeness rate for each sampling and analytical process). In addition, the Site Project Manager must document that random sampling of containers was performed for the purposes of waste stream characterization.~~

~~For each waste stream characterized, the Permittees shall require each Site Project Manager to determine if sufficient data have been collected to determine the following WAP-required waste parameters:~~

- ~~Waste matrix code~~
- ~~Waste material parameter weights~~
- ~~If each waste container of waste contains TRU radioactive waste~~
- ~~Mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream~~
- ~~The potential flammability of TRU waste headspace gases~~
- ~~Mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream~~
- ~~Whether the waste stream exhibits a toxicity characteristic (**TC**) under 40 CFR Part 261, Subpart C~~
- ~~Whether the waste stream can be classified as hazardous or nonhazardous at the 90-percent confidence level~~
- ~~Whether a sufficient number of waste containers have been visually examined (as a QC check on radiography) to determine with a reasonable level of certainty that the UCL_{90} for the miscertification rate is less than 14 percent~~
- ~~Whether all TICs were appropriately identified and reported in accordance with the requirements of Section B3-1 prior to submittal of a WSPF for a waste stream or waste stream lot.~~
- ~~Whether the overall completeness, comparability, and representativeness QAOs were met for each of the analytical and testing procedures as specified in Sections B3-2 through B3-9 prior to submittal of a WSPF for a waste stream or waste stream lot.~~
- ~~Whether the PRQLs for all analyses were met prior to submittal of a WSPF for a~~

waste stream or waste stream lot.

If the Site Project Manager determines that insufficient data have been collected to make the determinations listed above, additional data collection efforts must be undertaken. The reconciliation of a waste stream shall be performed prior to submittal of WSPF for that waste stream. For subsequent shipments, data reconciliation is done on all containers or samples prior to shipment to WIPP. The Permittees shall not manage, store, or dispose TRU mixed waste at WIPP unless the Site Project Manager determines that the WAP-required waste parameters listed above have been met.

The statistical procedure presented in Permit Attachment B2 shall be used by participating Site Project Managers to evaluate and report waste characterization data from the analysis of homogeneous solids and soil/gravel. The procedure, which calculates UCL_{90} values, shall be used to assess compliance with the DQOs in Attachment B, Section B-4a(1) as well as with RCRA regulations. The procedure must be applied to all laboratory analytical data for total VOCs, total SVOCs, and total metals. For RCRA regulatory compliance (40 CFR § 261.24), data from the analysis of the appropriate metals and organic compounds shall be expressed as toxicity characteristic leaching procedure (**TCLP**) values or results may also be compared to the TC levels expressed as total values. These total values will be considered the regulatory threshold limit (**RTL**) values for the WAP. RTL values are obtained by calculating the weight/weight concentration (in the solid) of a TC analyte that would give the regulatory weight/volume concentration (in the TCLP extract), assuming 100-percent analyte dissolution.

B3-11b Reconciliation at the Permittee Level

The Permittees must also ensure that data of sufficient type, quality, and quantity are collected to meet WAP DQOs. The Permittees will ensure sufficient data have been collected in accordance with Attachment B, Section B-4a(1) to determine the following:

- The concentration of VOC constituents in the headspace in the total waste inventory has not exceeded the environment performance standards of 20.4.1.500 NMAC (incorporating 40 CFR §264.601(c)) as specified in Module IV;

- Whether waste streams proposed for disposal in WIPP have been adequately characterized; and

- Whether data supports the information contained in the WIPP RCRA permit application

B3-12 Data Reporting Requirements

Data reporting requirements define the type of information and the method of transmittal for data transfer from the data generation level to the project level and from the project level to the Permittees.

B3-12a Data Generation Level

Data shall be transmitted by hard copy or electronically (provided a hard copy is available on demand) from the data generation level to the project level. Transmitted data shall include all Batch Data Reports, and data review checklists. The Batch Data Reports and checklists used must contain all of the information required by the testing, sampling, and analytical techniques described in Permit Attachments B1 through B6 , as well as the signature releases to document the review, validation, and verification as described in Section B3-10. All Batch Data Reports and checklists shall be in approved formats, as provided in site-specific documentation.

Batch Data Reports shall be forwarded to the site project office. Site QAPjPs shall specify the individual at the site project office who will receive these reports. After review by the Site Project QA Officer, all Batch Data Reports will be forwarded to the Site Project Manager. All Batch Data Reports shall be assigned serial numbers, and each page shall be numbered. The serial number used for Batch Data Reports can be the same as the testing, sampling, or analytical batch number.

QA documentation, including raw data shall be maintained in either testing, sampling, and analytical facility files, or site project files for those facilities located on site in accordance with the document storage requirements of site approved site QAPjPs. Contract waste characterization facilities shall forward testing, sampling, and analytical QA documentation along with Batch Data Reports to the site project office for inclusion in site project files.

B3-12b Project Level

The site project office shall prepare a WSPF for each waste stream certified for shipment to WIPP based on information obtained from Batch Data Reports. In addition, the site project

office must ensure that the Characterization Information Summary and the Waste Stream Characterization Package (when requested by the Permittees) are prepared as appropriate. The Site Project QA Officer must also verify these reports are consistent with information found in analytical batch reports. Summarized testing, sampling, and analytical data are included in the Characterization Information Summary. The contents of the WSPF, Characterization Information Summary, and Waste Stream Characterization Package are discussed in the following sections.

After approval of a WSPF and the associated Characterization Information Summary by the Permittees, the generator/storage site are required to maintain a cross reference of container identification numbers to each Batch Data Report.

A Waste Stream Characterization Package shall be transmitted by hard copy or electronically from the Site Project Manager to the Permittees when requested.

B3-12b(1) Waste Stream Profile Form

The Waste Stream Profile Form (WSPF, Figure B-1) shall include the following information:

- Generator/storage site name
- Generator/storage site EPA ID
- Date of audit report approval by NMED (if obtained)
- Original generator of waste stream
- The Waste Stream WIPP Identification Number
- Summary Category Group
- Waste Matrix Code Group
- Waste stream name
- A description of the waste stream

- ~~Applicable EPA hazardous waste codes~~
- ~~Applicable TRUCON codes~~
- ~~A listing of acceptable knowledge documentation used to identify the waste stream~~
- ~~The waste characterization procedures used and the reference and date of the procedure~~
- ~~Certification signature of Site Project Manager, name, title, and date signed~~

~~B3-12b(2)~~ ~~Characterization Information Summary~~

~~The Characterization Information Summary shall include the following elements:~~

- ~~Data reconciliation with DQOs~~
- ~~Headspace gas summary data listing the identification numbers of samples used in the statistical reduction, the maximum, mean, standard deviation, UCL_{90}, RTL, and associated EPA hazardous waste codes that must be applied to the waste stream.~~
- ~~Total metal, VOC, and SVOC analytical results for homogeneous solids and soil/gravel (if applicable)~~
- ~~TIC listing and evaluation, and verification that acceptable knowledge (**AK**) was confirmed.~~
- ~~Radiography and visual examination summary to document that all prohibited items are absent in the waste and to confirm AK.~~
- ~~A complete listing of all container identification numbers used to generate the WSPF, cross-referenced to each Batch Data Report~~
- ~~Complete AK summary, including stream name and number, point of generation,~~

waste stream volume (current and projected), generation dates, TRUCON codes, Summary Category Group, Waste Matrix Code(s) and Waste Matrix Code Group, other TWBIR information, waste stream description, areas of operation, generating processes, RCRA determinations, radionuclide information, all references used to generate the AK summary, and any other information required by Permit Attachment B4, Section B4-2b.

B3-12b(3) Waste Stream Characterization Package

The Waste Stream Characterization Package includes the following information:

- Waste Stream Profile Form (WSPF, Section B3-12b(1))
- Accompanying Characterization Information Summary (Section B3-12b(2))
- Complete AK summary (Section B3-12b(2))
- Batch Data Reports supporting the confirmation of AK and any others requested by the Permittees
- Raw analytical data requested by the Permittees

B3-12b(4) WIPP Waste Information System (**WWIS**) Data Reporting

The WWIS Data Dictionary includes all of the data fields, the field format and the limits associated with the data as established by this WAP. These data will be subjected to edit and limit checks that are performed automatically by the database, as defined in the *WIPP Waste Information System User's Manual for Use by Shippers/Generators* (DOE, 2001). If a container was part of a composite headspace gas sample, the analytical results from the composite sample must be assigned as the container headspace gas data results, including associated TICs, for every waste container associated with the composite sample.

The Permittees will coordinate the data transmission with each generator/storage site. Actual data transmission will use appropriate technology to ensure the integrity of the data transmissions. The Permittees will require sites with large waste inventories and large databases to populate a data structure provided by the Permittees that contains the required

~~data dictionary fields that are appropriate for the waste stream (or waste streams) at that site. For example, totals analysis data will not be requested from sites that do not have homogeneous solids or soil/gravel waste. The Permittees will access this data via the Internet to ensure an efficient transfer of this data. Small quantity sites will be given a similar data structure by the Permittees that is tailored to their types of waste. Sites with very small quantities of waste will be provided with the ability to assemble the data interactively to this data structure on the WWIS.~~

B3-1~~4~~3 Nonconformances

The Permittees shall require the status of work and the WAP activities at participating generator/storage sites to be monitored and controlled by the Site Project Manager and Site Project QA Officer. This monitoring and control shall include nonconformance identification, documentation, and reporting.

The nonconformances and corrective action processes specified in this section describe procedures between the Permittees and the generator/storage sites. ~~The Permittees shall comply with the nonconformance requirements specified in Section B3-1 of this Permit Attachment.~~

Nonconformances

Nonconformances are uncontrolled and unapproved deviations from an approved plan or procedure. Nonconforming items and activities are those that do not meet the WAP requirements, procurement document criteria, or approved work procedures. Nonconforming items shall be identified by marking, tagging, or segregating, and the affected generator/storage site(s) notified. The Permittees shall require participating sites reconcile and correct nonconforming items as appropriate in accordance with the Permittees' Quality Assurance Program Description (**QAPD**). Disposition of nonconforming items shall be identified and documented. The QAPjPs shall identify the person(s) responsible for evaluating and dispositioning nonconforming items and shall include referenced procedures for handling them.

Management at all levels shall foster a "no-fault" attitude to encourage the identification of nonconforming items and processes. Nonconformances may be detected and identified by anyone performing WAP activities, including

- Project staff - during field operations, supervision of subcontractors, data validation and verification, and self-assessment

- Laboratory staff - during the preparation for and performance of laboratory testing; calibration of equipment; QC activities; laboratory data review, validation, and verification; and self-assessment

- QA personnel - during oversight activities or audits

A nonconformance report shall be prepared for each nonconformance identified. Each nonconformance report shall be initiated by the individual(s) identifying the nonconformance. In the case of electronic data evaluation systems, NCRs may be generated manually or electronically, and will be addressed by the Independent Technical Reviewer prior to release of the data. The nonconformance report shall then be processed by knowledgeable and appropriate personnel. For this purpose, a nonconformance report including, or referencing as appropriate, results of laboratory analysis, QC tests, audit reports, internal memoranda, or letters shall be prepared. The nonconformance report must provide the following information:

- Identification of the individual(s) identifying or originating the nonconformance
- Description of the nonconformance
- Method(s) or suggestions for correcting the nonconformance (corrective action)
- Schedule for completing the corrective action
- An indication of the potential ramifications and overall useability of the data, if applicable
- Any approval signatures specified in the site nonconformance procedures

The Permittees shall require the Site Project QA Officer to oversee the nonconformance report process and be responsible for developing a plan to identify and track all nonconformances and report this information to the Permittees. Documentation of nonconformances shall be made available to the Site Project Manager, who in turn is responsible for notifying project personnel of the nonconformance. Completion of the corrective action for nonconformances must be verified by the Site Project QA Officer.

The Permittees will receive written notification of all non-administrative nonconformances (i.e., a failure to meet a DQO) first identified during the Site Project Manager Review within five (5) calendar days of identification. The Permittees will also receive a nonconformance report within thirty (30) calendar days of identification. The generator/storage site will implement a corrective action process and resolve the identified nonconformance prior to the Permittees management, storage, or disposal of TRU mixed waste at WIPP.

The Permittees shall send NMED a monthly summary of nonconformances identified during the previous month, indicating the number of nonconformances received and the generator/storage sites responsible.

Permittees' Corrective Action Process

The Permittees shall initiate a corrective action process when internal nonconformances and nonconformances at the generator/storage sites are identified. Activities and processes that do not meet requirements are documented as deficiencies.

When a deficiency is identified by the Permittees, the following process action steps are required:

- The condition is documented on a Corrective Action Report (**CAR**) by the individual identifying the problem.

- The Permittees have designated the CAR Initiator and Assessment Team Leader to review the CAR, determine validity of the finding (determine that a requirement has been violated), classify the significance of the condition, assign a response due date, and issue the CAR to the responsible party.

- The responsible organization reviews the CAR, evaluates the extent and cause of the deficiency and provides a response to the Permittees, indicating remedial actions and actions to preclude recurrence that will be taken.

- The Permittees review the response from the responsible organization and, if acceptable, communicate the acceptance to the responsible organization.

- The responsible organization completes remedial actions and actions to preclude

recurrence of the condition.

- After all corrective actions have been completed, the Permittees schedule and perform a verification to assure that corrective actions have been completed and are effective. When all actions have been completed and verified as being effective, the CAR is closed by the CAR Initiator and Assessment Team Leader on behalf of the Permittees.

- As part of the planning process for subsequent audits and surveillances, past deficiencies are reviewed and the previous deficient activity or process is subject to reassessment.

B3-15~~4~~ Special Training Requirements and Certifications

Before performing activities that affect WAP quality, all personnel are required to receive indoctrination into the applicable scope, purpose, and objectives of the WAP and the specific QAOs of the assigned task. Personnel assigned to perform activities for the WAP shall have the education, experience, and training applicable to the functions associated with the work. Evidence of personnel proficiency and demonstration of competence in the task(s) assigned must be demonstrated and documented. All personnel designated to work on specific aspects of the WAP shall maintain qualification (i.e., training and certification) throughout the duration of the work as specified in this WAP and applicable QAPjPs/procedures. Job performance shall be evaluated and documented at periodic intervals, as specified in the implementing procedures.

Personnel involved in WAP activities shall receive continuing training to ensure that job proficiency is maintained. Training includes both education in principles and enhancement of skills. Each participating site shall include in its QAPjP a description of the procedures for implementing personnel qualification and training. All training records that specify the scope of the training, the date of completion, and documentation of job proficiency shall be maintained as QA Records in the site project file.

Analytical laboratory line management must ensure that analytical personnel are qualified to perform the analytical method(s) for which they are responsible. The minimum qualifications for certain specified positions for the WAP are summarized in Table B3-10. QAPjPs, or their implementing SOPs, shall specify the site-specific titles and minimum training and qualification

requirements for personnel performing WAP activities. QAPjPs/procedures shall also contain the requirements for maintaining records of the qualification, training, and demonstrations of proficiency by these personnel.

An evaluation of personnel qualifications shall include comparing and evaluating the requirements specified in the job/position description and the skills, training, and experience included in the current resume of the person. This evaluation also must be performed for personnel who change positions because of a transfer or promotion as well as personnel assigned to short-term or temporary work assignments that may affect the quality of the WAP. QAPjPs/procedures shall identify the responsible person(s) for ensuring that all personnel maintain proficiency in the work performed and identify any additional training that may be required.

~~Section~~ B3-16~~5~~ - Changes to WAP Related Plans or Procedures

Controlled changes to WAP related plans or procedures shall be managed through the document control process described in the QAPD. The Site Project Manager and the Site Project QA Officer shall review all non-administrative changes and evaluate whether those changes could impact DQOs specified in the Permit. After site certification, any changes to WAP related plans or procedures that could positively or negatively impact DQOs (i.e., those changes that require prior approval of the Permittees as defined in Attachment B5, Section B5-2) shall be reported to the Permittees within five (5) days of identification by the project level review. The Permittees shall send NMED a monthly summary briefly describing the changes to plans and procedures identified pursuant to this section during the previous month.

B3-17~~6~~ List of References

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TABLES

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TABLE B3-1
WASTE MATERIAL PARAMETERS AND DESCRIPTIONS

Waste Material Parameter	Description
Iron-based Metals/Alloys	Iron and steel alloys in the waste; does not include the waste container materials
Aluminum-based Metals/Alloys	Aluminum or aluminum-based alloys in the waste materials
Other Metals	All other metals found in the waste materials
Other Inorganic Materials	Nonmetallic inorganic waste including concrete, glass, firebrick, ceramics, sand, and inorganic sorbents
Cellulosics	Materials generally derived from high-polymer plant carbohydrates; (e.g., paper, cardboard, wood, and cloth)
Rubber	Natural or man-made elastic latex materials; (e.g., surgeons' gloves, and leaded rubber gloves)
Plastics (waste materials)	Generally man-made materials, often derived from petroleum feedstock; (e.g., polyethylene and polyvinylchloride)
Organic Matrix	Cemented organic resins, solidified organic liquids and sludges
Inorganic Matrix	Any homogeneous materials consisting of sludge or aqueous-based liquids that are solidified with cement, calcium silicate, or other solidification agents; (e.g., wastewater treatment sludge, cemented aqueous liquids, and inorganic particulates)
Soils/gravel	Generally consists of naturally occurring soils that have been contaminated with inorganic waste materials
Steel (packaging materials)	55-gal (208-L) drums
Plastics (packaging materials)	90-mil polyethylene drum liner and plastic bags

TABLE B3-2
GAS VOLATILE ORGANIC COMPOUNDS TARGET ANALYTE LIST AND QUALITY ASSURANCE OBJECTIVES

Compound	CAS Number	Precision[a] (%RSD or RPD)	Accuracy[a] (%R)	MDL[b,f] (ng)	FTIRS MDL[b] (ppmv)	PRQL (ppmv)	Completeness (%)
Benzene	71-43-2	≤25	70-130	10	5	10	90
Bromoform	75-25-2	≤25	70-130	10	5	10	90
Carbon tetrachloride	56-23-5	≤25	70-130	10	5	10	90
Chlorobenzene	108-90-7	≤25	70-130	10	5	10	90
Chloroform	67-66-3	≤25	70-130	10	5	10	90
1,1-Dichloroethane	75-34-3	≤25	70-130	10	5	10	90
1,2-Dichloroethane	107-06-2	≤25	70-130	10	5	10	90
1,1-Dichloroethylene	75-35-4	≤25	70-130	10	5	10	90
cis-1,2-Dichloroethylene	156-59-2	≤25	70-130	10	5	10	90
trans-1,2-Dichloroethylene	156-60-5	≤25	70-130	10	5	10	90
Ethyl benzene [f]	100-41-4	≤25	70-130	10	10	10	90
Ethyl ether	60-29-7	≤25	70-130	10	5	10	90
Formaldehyde[c]	50-00-0	≤25	70-130	10	10	10	90
Hydrazine[d]	302-01-2	≤25	70-130	10	10	10	90
Methylene chloride	75-09-2	≤25	70-130	10	5	10	90
1,1,2,2-Tetrachloroethane	79-34-5	≤25	70-130	10	5	10	90
Tetrachloroethylene	127-18-4	≤25	70-130	10	5	10	90
Toluene	108-88-3	≤25	70-130	10	5	10	90
1,1,1-Trichloroethane	71-55-6	≤25	70-130	10	5	10	90
Trichloroethylene	79-01-6	≤25	70-130	10	5	10	90
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	≤25	70-130	10	5	10	90
m-Xylene[e]	108-38-3	≤25	70-130	10	5	10	90
o-Xylene	95-47-6	≤25	70-130	10	5	10	90
p-Xylene[e]	106-42-3	≤25	70-130	10	5	10	90
Acetone	67-64-1	≤25	70-130	150	50	100	90
Butanol	71-36-3	≤25	70-130	150	50	100	90
Methanol	67-56-1	≤25	70-130	150	50	100	90
Methyl ethyl ketone	78-93-3	≤25	70-130	150	50	100	90
Methyl isobutyl ketone	108-10-1	≤25	70-130	150	50	100	90

[a] Criteria apply to PRQL concentrations.
[b] Values based on delivering 10 mL to the analytical system.
[c] Required only for homogeneous solids and soil/gravel from Los Alamos National Laboratory.
[d] Required only for homogeneous solids and soil/gravel from Oak Ridge National Laboratory and the Savannah River Site.
[e] These xylene isomers cannot be resolved by GC/MS.
[f] The ethyl benzene PRQL for FTIRS is 20 ppm

CAS = Chemical Abstract Service
%RSD = Percent relative standard deviation
RPD = Relative percent difference
%R = Percent recovery
MDL = Method detection limit (maximum permissible value), for GC/MS and GC/FID; total number of nanograms delivered to the analytical system per sample (nanograms); for FTIRS based on 1 m sample cell
PRQL = Program required quantitation limit (parts per million/volume basis)

TABLE B3-3
SUMMARY OF LABORATORY QUALITY CONTROL SAMPLES AND FREQUENCIES FOR GAS VOLATILE ORGANIC COMPOUND ANALYSIS

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action[a]
Method performance samples	Seven (7) samples initially and four (4) semiannually	Meet method QAOs	Repeat until acceptable
Laboratory duplicates or on-line duplicates	One (1) per analytical batch or on-line batch	RPD ≤ 25[b]	Nonconformance if RPD >25
Laboratory blanks or on-line blanks	Daily prior to sample analysis for GC/MS and GC/FID. Otherwise daily prior to sample analysis and one (1) per analytical batch or on-line batch	Analyte amounts ≤ 3 x MDLs for GC/MS and GC/FID; ≤ PRQL for FTIRS	Flag Data if analyte amounts > 3 x MDLs for GC/MS and GC/FID; > PRQL for FTIRS
Laboratory control samples or on-line control samples	One (1) per analytical batch or on-line batch	70-130 %R	Nonconformance if %R <70 or >130
GC/MS comparison sample (for FTIRS only)	One (1) per analytical or on-line batch	RPD ≤ 25[b]	Nonconformance if RPD > 25
Blind audit samples	Samples and frequency controlled by the Gas PDP Plan	Specified in the Gas PDP Plan	Specified in the Gas PDP Plan

[a] Corrective action per Section B3-14~~13~~ when final reported QC samples do not meet the acceptance criteria.
[b] Applies only to concentrations greater than the PRQLs listed in Table B3-2.

MDL = Method Detection Limit
QAO = Quality Assurance Objective
PDP = Performance Demonstration Program
PRQL = Program Required Quantitation Limit
%R = Percent Recovery
RPD = Relative Percent Difference

TABLE B3-4
VOLATILE ORGANIC COMPOUNDS TARGET ANALYTE LIST AND QUALITY ASSURANCE OBJECTIVES

Compound	CAS Number	Precision[a] (%RSD or RPD)	Accuracy[a] (%R)	MDL[b] (mg/kg)	PRQL[b] (mg/kg)	Completeness (%)
Benzene	71-43-2	≤45	37-151	1	10	90
Bromoform	75-25-2	≤47	45-169	1	10	90
Carbon disulfide	75-15-0	≤50	60-150	1	10	90
Carbon tetrachloride	56-23-5	≤30	70-140	1	10	90
Chlorobenzene	108-90-7	≤38	37-160	1	10	90
Chloroform	67-66-3	≤44	51-138	1	10	90
1,4-Dichlorobenzene[c]	106-46-7	≤60	18-190	1	10	90
ortho-Dichlorobenzene[c]	95-50-1	≤60	18-190	1	10	90
1,2-Dichloroethane	107-06-2	≤42	49-155	1	10	90
1,1-Dichloroethylene	75-35-4	≤250	D-234[d]	1	10	90
trans-1,2-Dichloroethylene	156-60-5	≤50	60-150	1	10	90
Ethyl benzene	100-41-4	≤43	37-162	1	10	90
Methylene chloride	75-09-2	≤50	D-221[d]	1	10	90
1,1,2,2-Tetrachloroethane	79-34-5	≤55	46-157	1	10	90
Tetrachloroethylene	127-18-4	≤29	64-148	1	10	90
Toluene	108-88-3	≤29	47-150	1	10	90
1,1,1-Trichloroethane	71-55-6	≤33	52-162	1	10	90
1,1,2-Trichloroethane	79-00-5	≤38	52-150	1	10	90
Trichloroethylene	79-01-6	≤36	71-157	1	10	90
Trichlorofluoromethane	75-69-4	≤110	17-181	1	10	90
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	≤50	60-150	1	10	90
Vinyl chloride	75-01-4	≤200	D-251[d]	1	4	90
m-xylene	108-38-3	≤50	60-150	1	10	90
o-xylene	95-47-6	≤50	60-150	1	10	90
p-xylene	106-42-3	≤50	60-150	1	10	90
Acetone	67-64-1	≤50	60-150	10[e]	100	90
Butanol	71-36-3	≤50	60-150	10[e]	100	90
Ethyl ether	60-29-7	≤50	60-150	10[e]	100	90
Formaldehyde[f]	50-00-0	≤50	60-150	10[e]	100	90
Hydrazine[g]	302-01-2	≤50	60-150	10[e]	100	90
Isobutanol	78-83-1	≤50	60-150	10[e]	100	90
Methanol	67-56-1	≤50	60-150	10[e]	100	90
Methyl ethyl ketone	78-93-3	≤50	60-150	10[e]	100	90
Pyridine[c]	110-86-1	≤50	60-150	10[e]	100	90

[a] . Applies to laboratory control samples and laboratory matrix spikes. If a solid laboratory control sample material which has established statistical control limits is used, then the established control limits for that material should be used for accuracy requirements.

[b] TCLP MDL and PRQL values are reported in units of mg/l and limits are reduced by a factor of 20.

[c] Can also be analyzed as a semi-volatile organic compound. If analyzed as a semi-volatile compound, the QAOs of Table B3-6 apply.

[d] Detected; result must be greater than zero.

[e] Estimate, to be determined.

[f] Required only for homogeneous solids and soil/gravel from Los Alamos National Laboratory.

[g] Required only for homogeneous solids and soil/gravel from Oak Ridge National Laboratory and Savannah River Site.

CAS = Chemical Abstract Service
%RSD = Percent relative standard deviation
RPD = Relative percent difference
%R = Percent recovery
MDL = Method detection limit (maximum permissible value) (milligrams per kilogram)
PRQL = Program required quantitation limit; calculated from the toxicity characteristic level for benzene assuming a 0.9 oz (25-gram [g]) sample, 0.1 gal (0.5 liter [L]) of extraction fluid, and 100 percent analyte extraction (milligrams per kilogram)

TABLE B3-5
SUMMARY OF LABORATORY QUALITY CONTROL SAMPLES AND FREQUENCIES FOR VOLATILE ORGANIC COMPOUND ANALYSIS

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action[a]
Method performance samples	Seven (7) samples initially and four (4) semiannually	Meet Table B3-4 QAOs	Repeat until acceptable
Laboratory duplicates[b]	One (1) per analytical batch	Meet Table B3-4 precision QAOs	Nonconformance if RPDs > values in Table B3-4
Laboratory blanks	One (1) per analytical batch	Analyte concentrations ≤ 3 x MDLs	Nonconformance if analyte concentrations > 3 x MDLs
Matrix spikes[b]	One (1) per analytical batch	Meet Table B3-4 accuracy QAOs	Nonconformance if %Rs are outside the range specified in Table B3-4
Matrix spike duplicates	One (1) per analytical batch	Meet Table B3-4 accuracy and precision QAOs	Nonconformance if RPDs values and %Rs outside range specified in Table B3-4
Laboratory control samples	One (1) per analytical batch	Meet Table B3-4 accuracy QAO's	Nonconformance if %R < 80 or > 120
GC/MS Calibration	BFB Tune every 12 hours 5-pt. Initial Calibration initially, and as needed	Abundance criteria met as per method Calibrate according to SW-846 Method requirements: %RSD for CCC ≤ 30, %RSD for all other compounds ≤ 15% Average response factor (RRF) used if %RSD ≤ 15, use linear regression if %RSD >15; R or R^2 ≥ 0.990 if using alternative curve System Performance Check Compound (SPCC) minimum RRF as per SW-846 Method; RRF for all other compounds ≥ 0.01	Repeat until acceptable

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action[a]
GC/MS Calibration (continued)	Continuing Calibration every 12 hours	%D ≤ 20 for CCC; SPCC minimum RRF as per SW-846 Method; RRF for all other compounds ≥ 0.01 RT for internal standard must be ± 30 seconds from last daily calibration, internal standard area count must be >50% and <200% of last daily calibration	Repeat until acceptable
GC/FID Calibration	3-pt. Initial Calibration initially and as needed Continuing Calibration every 12 hours	Correlation Coefficient ≥ 0.990 or %RSD ≤ 20 for all analytes %D or %Drift for all analytes ≤ 15 of expected values, RT ± 3 standard deviations from initial RT calibration per applicable SW-846 Method	Repeat until acceptable.
Surrogate compounds	Each analytical sample	Average %R from minimum of 30 samples for a given matrix ±3 standard deviations	Nonconformance if %R < (average %R - 3 standard deviation) or > (average %R + 3 standard deviation)
Blind audit samples	Samples and frequency controlled by the Solid PDP Plan	Specified in the Solid PDP Plan	Specified in the Solid PDP Plan

[a] Corrective Action per section B3-1413 when final reported QC samples do not meet the acceptance criteria. Nonconformances do not apply to matrix related exceedances.
[b] May be satisfied using matrix spike duplicate; acceptance criteria applies only to concentrations greater than the PRQLs listed in Table B3-4.

MDL = Method detection limit
QAO = Quality assurance objective
PDP = Performance Demonstration Program
%R = Percent recovery
RPD = Relative percent difference

TABLE B3-6
SEMI-VOLATILE ORGANIC COMPOUND TARGET ANALYTE LIST AND QUALITY ASSURANCE OBJECTIVES

Compound	CAS Number	Precision[a] (%RSD or RPD)	Accuracy [a] (%R)	MDL[b] (mg/kg)	PRQL[b] (mg/kg)	Completeness (%)
Cresols	1319-77-3	≤50	25-115	5	40	90
1,4-Dichlorobenzene[bc]	106-46-7	≤86	20-124	5	40	90
ortho-Dichlorobenzene[c]	95-50-1	≤64	32-129	5	40	90
2,4-Dinitrophenol	51-28-5	≤119	D-172[e]	5	40	90
2,4-Dinitrotoluene	121-14-2	≤46	39-139	0.3	2.6	90
Hexachlorobenzene	118-74-1	≤319	D-152[e]	0.3	2.6	90
Hexachloroethane	67-72-1	≤44	40-113	5	40	90
Nitrobenzene	98-95-3	≤72	35-180	5	40	90
Polychlorinated Biphenyls				5	40	90
Aroclor 1016[d]	12674-11-2	≤33	50-114	5	40	90
Aroclor 1221[d]	11104-28-2	≤110	15-178	5	40	90
Aroclor 1232[d]	11141-16-5	≤128	10-215	5	40	90
Aroclor 1242[d]	53469-21-9	≤49	39-150	5	40	90
Aroclor 1248[d]	12672-29-6	≤55	38-158	5	40	90
Aroclor 1254[d]	11097-69-1	≤62	29-131	5	40	90
Aroclor 1260[d]	11096-82-5	≤56	8-127	5	40	90
Pentachlorophenol	87-86-5	≤128	14-176	5	40	90
Pyridine[c]	110-86-1	≤50	25-115	5	40	90

CAS = Chemical Abstract Service
%RSD = Percent relative standard deviation
RPD = Relative percent difference
%R = Percent recovery
MDL = Method detection limit (maximum permissible value) (milligrams per kilogram)
PRQL = Program required quantitation limit; calculated from the toxicity characteristic level for nitrobenzene assuming a 100-gram (g) sample, 0.5 gal (2 liter [L]) of extraction fluid, and 100 percent analyte extraction (milligrams per kilograms)

[a] Applies to laboratory control samples and laboratory matrix spikes. If a solid laboratory control sample material which has established statistical control limits is used, then the established control limits for that material should be used for accuracy requirements.
[b] TCLP MDL and PRQL values are reported in units of mg/l and limits are reduced by a factor of 20.
[c] Can also be analyzed as a volatile organic compound
[d] Required only for waste matrix code S3220 (organic sludges)
[e] Detected; result must be greater than zero

TABLE B3-7
SUMMARY OF LABORATORY QUALITY CONTROL SAMPLES AND FREQUENCIES FOR SEMI-VOLATILE ORGANIC COMPOUNDS ANALYSIS

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action[a]
Method performance samples	Seven (7) samples initially and four (4) semiannually	Meet Table B3-6 QAOs	Repeat until acceptable
Laboratory duplicates[b]	One (1) per analytical batch	Meet Table B3-6 precision QAOs	Nonconformance if RPDs > values in Table B3-6
Laboratory blanks	One (1) per analytical batch	Analyte concentrations ≤ 3 x MDLs	Nonconformance if analyte concentrations > 3 x MDLs
Matrix spikes	One (1) per analytical batch	Meet Table B3-6 accuracy QAOs	Nonconformance if RPDs > values and %Rs outside range specified in Table B3-6
GC/MS Calibration	DFTPP Tune every 12 hours 5-pt. Initial Calibration initially, and as needed Continuing Calibration every 12 hours	Abundance criteria met as per method Calibrate according to SW-846 Method requirements: %RSD for CCC ≤ 30, %RSD for all other compounds ≤ 15% Average response factor (RRF) used if %RSD ≤ 15, use linear regression if >15; R or R^2 ≥0.990 if using alternative curve System Performance Check Compound (SPCC) minimum RRF as per SW-846 Method; RRF for all other compounds ≥ 0.01 %D≤ 20 for CCC, SPCC minimum RRF as per SW-846 Method; RRF for all other compounds ≥ 0.01 RT for internal standard must be ± 30 seconds from last daily calibration, internal standard area count must be >50% and <200% of last daily calibration	Repeat until acceptable
GC/ECD Calibration	5 pt. Initial Calibration initially and as needed Continuing Calibration every 12 hours	Correlation Coefficient ≥ 0.990 or %RSD < 20 for all analytes %D or %Drift for all analytes ≤ 15 of expected values, RT ± 3 standard deviations of initial RT calibration per applicable SW-846 Method	Repeat until acceptable

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action[a]
Matrix spike duplicates	One (1) per analytical batch	Meet Table B3-6 accuracy and precision QAOs	Nonconformance if RPDs and %Rs > values in Table B3-6
Laboratory control samples	One (1) per analytical batch	Meet Table B3-6 accuracy QAO's	Nonconformance if %R < 80 or > 120
Surrogate compounds	Each analytical sample	Average %R from minimum of 30 samples from a given matrix ±3 standard deviations	Nonconformance if %R < (average %R - 3 standard deviations) or > (average %R + 3 standard deviations)
Blind audit samples	Samples and frequency controlled by the Solid PDP Plan	Specified in the Solid PDP Plan	Specified in the Solid PDP Plan

[a] Corrective action per section B3-1413 when final reported QC samples do not meet the acceptance criteria. Nonconformances do not apply to matrix related exceedances.
[b] May be satisfied by using matrix spike duplicate; acceptance criteria applies only to concentrations greater than the PRQLs listed in Table B3-6.

MDL	=	Method Detection Limit
QAO	=	Quality Assurance Objective
PDP	=	Performance Demonstration Program
%R	=	Percent Recovery
RPD	=	Relative Percent Difference

TABLE B3-8
METALS TARGET ANALYTE LIST
AND QUALITY ASSURANCE OBJECTIVES

Analyte	CAS Number	Precision (%RSD or RPD)[a]	Accuracy (%R)[b]	PRDL[d] (μg/L)	PRQL[c] (mg/kg)	Completeness (%)
Antimony	7440-36-0	≤30	80-120	100	100	90
Arsenic	7440-38-2	≤30	80-120	100	100	90
Barium	7440-39-3	≤30	80-120	2000	2000	90
Beryllium	7440-41-7	≤30	80-120	100	100	90
Cadmium	7440-43-9	≤30	80-120	20	20	90
Chromium	7440-47-3	≤30	80-120	100	100	90
Lead	7439-92-1	≤30	80-120	100	100	90
Mercury	7439-97-6	≤30	80-120	4.0	4.0	90
Nickel	7440-02-0	≤30	80-120	100	100	90
Selenium	7782-49-2	≤30	80-120	20	20	90
Silver	7440-22-4	≤30	80-120	100	100	90
Thallium	7440-28-0	≤30	80-120	100	100	90
Vanadium	7440-62-2	≤30	80-120	100	100	90
Zinc	7440-66-6	≤30	80-120	100	100	90

[a] ≤ 30 percent control limits apply when sample and duplicate concentrations are ≥ 10 x IDL for ICP-AES and AA techniques, and ≥ 100 x IDL for Inductively Coupled Plasma—Mass Spectrometry (ICP-MS) techniques. If less than these limits, the absolute difference between the two values shall be less than or equal to the PRQL.
[b] Applies to laboratory control samples and laboratory matrix spikes. If a solid laboratory control sample material which has established statistical control limits is used, then the established control limits for that material should be used for accuracy requirements.
[c] TCLP PRQL values are reported in units of mg/l and limits are reduced by a factor of 20.
[d] PRDL set such that it is a factor of 10 below the PRQL for 100 percent solid samples, assuming a 100x dilution during digestion.

CAS = Chemical Abstract Service
%RSD = Percent relative standard deviation
RPD = Relative percent difference
%R = Percent recovery
PRDL = Program required detection limit (i.e., maximum permissible value for IDL) (micrograms per liter)
PRQL = Program required quantitation limit (milligrams per kilogram)

TABLE B3-9
SUMMARY OF LABORATORY QUALITY CONTROL SAMPLES AND FREQUENCIES FOR METALS ANALYSIS

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action[a]
Method performance samples	Seven (7) samples initially and four (4) semiannually	Meet Table B3-8 QAOs	Repeat until acceptable
Laboratory blanks	One (1) per analytical batch	≤ 3 x IDL (≤ 5 x IDL for ICP-MS)[b]	Redigest and reanalyze any samples with analyte concentrations which are ≤10 x blank value and ≥ 0.5 x PRQL
Matrix spikes	One (1) per analytical batch	Meet Table B3-8 accuracy QAOs	Nonconformance if %R outside the range specified in Table B3-8
Matrix spike duplicates	One (1) per analytical batch	Meet Table B3-8 accuracy and precision QAOs	Nonconformance if RPDs > values and %Rs outside the range specified in Table B3-8
ICP-MS Tune (ICP-MS Only)	Daily	4 Replicate %RSD ≤ 5; mass calibration within 0.9 amu; resolution < 1.0 amu full width at 10% peak height	Nonconformance if %RSD > 5; mass calibration > 0.9 amu; resolution > 1.0 amu
Initial Calibration 1 blank, 1 standard (ICP, ICP-MS) 3 standard, 1 blank (GFAA, FLAA) 5 standard, 1 blank (CVAA, HAA)	Daily	90-110 %R (80-120% for CVAA, GFAA, HAA, FLAA) for initial calibration verification solution. Regression coefficient ≥ 0.995 for FLAA, CVA, GFAA, MAA	Correct problem and recalibrate; repeat initial calibration
Continuing Calibration	Every 10 samples and beginning and end of run	90-110% for continuing calibration verification solution. (80-120% for CVAA, GFAA, HAA, FLAA)	Correct problem and recalibrate; rerun last 10 samples
Internal Standard Area Verification (ICP-MS)	Every Sample	Meet SW-846 Method 6020 criteria	Nonconformance if not reanalyzed at 5 X dilution until criteria are met
Serial Dilution (ICP, ICP-MS)	One (1) per analytical batch	5 X dilution must be ≤10% D of initial value for sample > 50xIDL	Flag Data if >10% and > 50xIDL

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action[a]
Interference Correction Verification (ICP, ICP-MS)	Beginning and end of run or every 12 hours (8 for ICP) whichever is more frequent	80-120% recovery for analytes Note: Acceptance Criteria and Corrective Action apply only if interferents found in samples at levels greater than ICS A Solution	Correct problem and recalibrate, nonconformance if not corrected
Laboratory Control Samples	One (1) per analytical batch	Table B3-8 accuracy QAOs	Redigest and reanalyze for affected analytes; non conformance if not reanalyzed
Blind audit samples	Samples and frequency controlled by the Solid PDP Plan	Specified in the Solid PDP Plan	Specified in the Solid PDP Plan

[a] Corrective action per section B3-14~~13~~ when final reported QC samples do not meet the acceptance criteria. Nonconformances do not apply to matrix related exceedances.
[b] Applies only to concentrations greater than the PRQLs listed in Table B3-8.

IDL	=	Instrument Detection Limit
PDP	=	Performance Demonstration Program
PRQL	=	Program Required Quantitation Limit
%R	=	Percent Recovery
RPD	=	Relative Percent Difference

TABLE B3-10
MINIMUM TRAINING AND QUALIFICATIONS REQUIREMENTS[a]

Personnel	Requirements[a]
Radiography Operators[c]	Site-specific training based on waste matrix codes and waste material parameters; requalification every 2 years
FTIRS Technical Supervisors[b] FTIRS Operators[c]	Site-specific and on-the-job training based on the site-specific FTIRS system; requalification every 2 years
Gas Chromatography Technical Supervisors[b] Gas Chromatography Operators[c]	B.S. or equivalent experience and 6 months previous applicable experience
Gas Chromatography/Mass Spectrometry Operators[c] Mass Spectrometry Operators[c]	B.S. or equivalent experience and 1 year independent spectral interpretation or demonstrated expertise
Gas Chromatography/Mass Spectrometry Technical Supervisors[b] Mass Spectrometry Technical Supervisors[b] Atomic Absorption Spectroscopy Technical Supervisors[b] Atomic Absorption Spectroscopy Operators[c] Atomic Mass Spectrometry Operators[c] Atomic Emission Spectroscopy Operators[c]	B.S. or equivalent experience and 1 year applicable experience
Atomic Mass Spectrometry Technical Supervisors[b]	B.S. and specialized training in Atomic Mass Spectrometry and 2 years applicable experience
Atomic Emission Spectroscopy Technical Supervisors[b]	B.S. and specialized training in Atomic Emission Spectroscopy and 2 years applicable experience.

[a] Based on requirements contained in *USEPA Contract Laboratory Program Statement of Work for Organics Analysis* (Document Number OLM 01.0) and *Statement of Work for Inorganics Analysis* (Document Number ILM 03.0).

[b] Technical Supervisors are those persons responsible for the overall technical operation and development of a specific laboratory technique. QAPjPs shall include the site-specific title for this position.

[c] Operators are those persons responsible for the actual operation of analytical equipment. QAPjPs shall include the site-specific title for this position. Independent Technical Reviewers shall meet the training and qualification requirements for the related Operator.

TABLE B3-11
TESTING BATCH DATA REPORT CONTENTS

Required Information	Radiography	Visual Examination as QC Check on Radiography	Visual Verification of Acceptable Knowledge	Comment
Batch Data Report Date	X	X	X	
Batch number	X	X	X	
Waste container number	X	X	X	
Waste stream name and/or number	O	O	O	
Waste Matrix Code	X	X	X	Summary Category Group included in waste matrix code
Implementing procedure (specific version used)	X	X	X	If procedure cited contains more than one method, the method used must also be cited. Can use revision number, date, or other means to track specific version used.
Container type	O	O	O	Drums, Standard Waste Box, Ten Drum Overpack, etc.
Videotape reference	X	X		Reference to Videotape(s) applicable to each container. For visual examination (for characterization) of newly generated waste, videotape not required if two trained operators review the contents of the waste container to ensure correct reporting.
Imaging check	O			
Camera check		O		
Audio check	O	O		
QC check of scales		O	O	Available documented evidence calibrated scale(s) were used. Only applicable if items are weighed during the visual examination.
QC documentation	X	X	X	
Description of liners and layers of confinement (if possible)	X	X	X	
Indication of vented rigid liners	X	X	X	Only required for containers with rigid liners. If radiography is used to verify, then include in Testing Batch Data Report.

Required Information	Radiography	Visual Examination as QC Check on Radiography	Visual Verification of Acceptable Knowledge	Comment
Description of container contents	X	X	X	Provide enough detail to identify all discernable waste items, etc. and to verify estimated weights for the 12 waste matrix parameters.
Verification that the physical form matches the waste stream description and Waste Matrix Code.	X	X	X	Summary Category Group included in waste matrix code
Indication of sealed containers > 4L	X	X	X	
Amount of free liquids	X	X	X	
Estimated weights for the 12 waste matrix parameters	X	X	X	Table B3-1 lists waste matrix parameters.
Container gross weight	X	X	X	
Container empty weight	O	O	O	Established, documented empty container weights can be used.
Comments	X	X	X	
Reference to or copy of associated NCRs, if any	X	X	X	Copies of associated NCRs must be available.
Visual examination expert decisions		X		Only applicable if visual examination expert is consulted during visual examination.
Verify absence of prohibited items	X	X	X	
Operator signature and date of test	X	X	X	Signatures of both operators required for Visual Verification of Acceptable Knowledge
Signature of visual examination expert and date		X		.
Data review checklists	X	X	X	All review data checklists will be identified

LEGEND:
X - Required in batch data report.
O - Information must be documented and traceable; inclusion in batch data report is optional.

TABLE B3-12
SAMPLING BATCH DATA REPORT CONTENTS

Required Information	Headspace Gas	Solid Sampling	Comment
Batch Data Report Date	X	X	
Batch number	X	X	
Waste stream name and/or number	O	O	
Waste Matrix Code		X	Summary Category Group included in Waste Matrix Code
Procedure (specific version used)	X	X	If procedure cited contains more than one method, the method used must also be cited. Can use revision number, date, or other means to track specific version used.
Container number	X	X	
Container type	O	O	Drums, Standard Waste Box, Ten Drum Overpack, etc.
Sample matrix and type	X	X	
Analyses requested and laboratory	X	X	
Point of origin for sampling	X	X	Location where sample was taken (e.g., building number, room)
Sample number	X	X	
Sample size	X	X	
Sample location	X	X	Location within container where sample is taken. (For HSG, specify what layer of confinement was sampled. For solids, physical location within container.)
Sample preservation	X	X	
Person collecting sample	X	X	
Person attaching custody seal	O	O	May or may not be the same as the person collecting the sample
Chain of custody record	X	X	Original or copy is allowed
Sampling equipment numbers	X	X	For disposable equipment, a reference to the lot
Cross-reference of sampling equipment numbers with associated cleaning batch numbers	O	X	As applicable to the equipment used for the sampling. For disposable equipment, a reference to the lot and procurement records to support cleanliness is sufficient
Drum age	X		
Equilibration time	X		

Required Information	Headspace Gas	Solid Sampling	Comment
Verification of rigid liner venting	X		Only applicable to containers with rigid liners
Verification that sample volume taken is small in comparison to the available volume	X		Must include headspace gas volume when it can be estimated
Scale Calibration		O	
Depth of waste		X	For newly generated waste, if a sampling method other than coring is used, this is replaced by documentation that a representative sample has been taken.
Calculation of core recovery		X	For newly generated waste, if a sampling method other than coring is used, this is replaced by documentation that a representative sample has been taken.
Co-located core description		X	For newly generated waste, if a sampling method other than coring is used, this is replaced by documentation that a QC sample has been taken.
Time between coring and subsampling		X	Only applicable to coring.
OVA calibration and reading	O		Only applicable to manifold systems. Must be done in accordance with manufacturer's specifications
Field Records	X	X	Must contain the following as applicable to the sampling method used: Collection problems, Sequence of sampling collection, Inspection of the solids sampling area, Inspection of the solids sampling equipment, Coring tool test, random location of sub-sample, canister pressure, and ambient temperature and pressure.
Reference to or copy of associated NCRs, if any	X	X	Copies of associated NCRs must be available.
Operator Signature and date and time of sampling	X	X	
Data review checklists	X	X	All data review checklists will be identified

LEGEND:
X - Required in batch data report.
O - Information must be documented and traceable; inclusion in batch data report is optional.

TABLE B3-13
ANALYTICAL BATCH DATA REPORT CONTENTS

Required Information	Headspace Gas	Solid Sampling	Comment
Batch Data Report Date	X	X	
Batch number	X	X	
Sample numbers	X	X	
QC designation for sample	X	X	
Implementing procedure (specific version used)	X	X	If procedure cited contains more than one method, the method used must also be cited. Can use revision number, date, or other means to track specific version used.
QC sample results	X	X	
Sample data forms	X	X	Form should contain reduced data for target analytes and TICs
Chain of custody	X	X	Original or copy
Gas canister tags	X		Original or copy
Sample preservation	X	X	
Holding time		O	
Cross-reference of field numbers to laboratory sample numbers	X	X	
Date and time analyzed	X	X	
Confirmation of spectra used for results	O	O	Analyst must qualitatively evaluate the validity of the results based on the spectra, can be implemented as a check box for each sample
TIC evaluation	X	X	
Reporting flags, if any	X	X	Table B3-14 lists applicable flags
Case narrative	X	X	
Reference to or copy of associated NCRs, if any	X	X	Copies of associated NCRs must be available.
Operator signature and analysis date	O	O	
Data review checklists	X	X	All data review checklists will be identified

LEGEND:
X - Required in batch data report.
O - Information must be documented and traceable; inclusion in batch data report is optional.

TABLE B3-14
DATA REPORTING FLAGS

DATA FLAG	INDICATOR
B	Analyte detected in blank (Organics/ Headspace gases)
B	Analyte blank concentration greater than or equal to 20 percent of sample concentration prior to dilution corrections (Metals)
E	Analyte exceeds calibration curve (Organics/ Headspace gases)
J	Analyte less than PRQL but greater than or equal to MDL (Organics/ Headspace gases)
J	Analyte greater than or equal to IDL but less than 5 times the IDL before dilution correction (Metals)
U	Analyte was not detected and value is reported as the MDL (IDL for Metals)
D	Analyte was quantitated from a secondary dilution, or reduced sample aliquot (Organics/ Headspace gases)
Z	One or more QC samples do not meet acceptance criteria
H	Holding time exceeded

FIGURES

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~~Figure B3-1~~
~~Overall Headspace-Gas Sampling Scheme Illustrating Manifold Sampling~~

WIPP WASTE STREAM PROFILE FORM

Waste Stream Profile Number:_____
Generator site name: _____ Technical contact: _____
Generator site EPA ID: _____ Technical contact phone number: _____
Date of audit report approval by NMED: _____
Title, version number, and date of documents used for WAC certification: _____

_____
Did your facility generate this waste? ☐ Yes ☐ No If no, provide the name and EPA ID of the original generator:

_____ _____

Waste Stream Information [1]

WIPP ID: _____ Summary Category Group: _____
Waste Matrix Code Group: _____ Waste Stream Name: _____
Description from the WTWBIR: _____

_____
Defense TRU Waste: ☐ Yes ☐ No
Check one: ☐ CH ☐ RH Number of SWBs _____Number of Drums _____ Number of Canisters _____
Batch Data Report numbers supporting this waste stream characterization: _____
List applicable EPA Hazardous Waste Codes(2): _____

_____
Applicable TRUCON Content Codes: _____

Acceptable Knowledge Information[1]

[*For the following, enter supporting the documentation used (i.e., references and dates)*]

Required Program Information

- Map of site: _____
- Facility mission description: _____
- Description of operations that generate waste: _____

  _____
- Waste identification/categorization schemes: _____
- Types and quantities of waste generated: _____
- Correlation of waste streams generated from the same building and process, as appropriate:_____

  _____
- Waste certification procedures: _____

Required Waste Stream Information

- Area(s) and building(s) from which the waste stream was generated: _____
- Waste stream volume and time period of generation: _____
- Waste generating process description for each building: _____
- Process flow diagrams: _____
- Material inputs or other information identifying chemical/radionuclide content and physical waste form:_____

  _____
- Which Defense Activity generated the waste: (Check one) _____

  ☐ Weapons activities including defense inertial confinement fusion ☐ Naval Reactors development
  ☐ Verification and control technology ☐ Defense research and development
  ☐ Defense nuclear waste and material by products management ☐ Defense nuclear materials production
  ☐ Defense nuclear waste and materials security and safeguards and security investigations

Figure B3-1
Waste Stream Profile Form (Example Only)

WIPP WASTE STREAM PROFILE FORM

Supplemental Documentation

- Process design documents: _____
- Standard operating procedures: _____
- Safety Analysis Reports: _____
- Waste packaging logs: _____
- Test plans/research project reports: _____
- Site data bases: _____
- Information from site personnel: _____
- Standard industry documents: _____
- Previous analytical data: _____
- Material safety data sheets: _____
- Sampling and analysis data from comparable/surrogate Waste: _____
- Laboratory notebooks: _____

Sampling and Analysis Information(1)

[*For the following, when applicable, enter procedure title(s), number(s) and date(s)*]

☐ Radiography: _____
☐ Visual Examination: _____
☐ Headspace Gas Analysis
VOCs: _____
Flammable: _____
Other gases (specify): _____
☐ Homogeneous Solids/Soils/Gravel Sample Analysis
Total metals _____
PCBs: _____
VOCs: _____
Nonhalogenated VOCs: _____
Semi-VOCs: _____
Other (specify): _____

Waste Stream Profile Form certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
Signature of Site QA Officer	Printed Name and Title	Date

NOTE (1) Use back of sheet or continuation sheets, if required.
(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine EPA Hazardous Waste Codes, attach signed Characterization Information Summary documenting this determination.

Figure B3-1 (continued)
Waste Stream Profile Form (Example Only)

Attachment F: Proposed Changes to Permit Attachment B6

Note:

- **Only the changed portions of Permit Attachment B6 text are included.**
- **Table B6-1 is included in its entirety due to the number of changes included in this permit modification request.**
- **For Tables B6-2 through B6-6, only changed items are included.**

Proposed Changed to Text Portions of Permit Attachment B6

Reference	Affected Text
Permit Attachment B6, Section B6-2, ¶1	Audit procedures shall establish the responsibilities and methodology for planning, scheduling, performing, reporting, verifying, and closing announced and unannounced audits of sites. Records of all audit activities shall be part of the WIPP Operating Record and maintained at the WIPP facility until closure. NMED shall be provided unlimited access to these records, which can be in hard copy or electronic format.
Permit Attachment B6, Section B6-3, ¶2, Bullet 8	Prepare and release ~~sign~~ the audit report
Permit Attachment B6, Section B6-4, last ¶	The final audit report provided to NMED and audit records will be maintained at WIPP as a part of the Operating Record. Audit reports may be in electronic or hard copy format. These records will be included on the Record Inventory and Disposition Schedule and maintained on-site until closure of the WIPP facility. NMED shall be provided unlimited access to these records.

Proposed Changed to Table B6-1

Note: Due to the number of proposed changes, the entire table is included.

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	WASTE STREAM IDENTIFICATION					
1	Does the generator/storage site define "waste stream" as waste material generated from a single process or activity that is similar in material, physical form, and hazardous constituents? (Waste may be generated as either process or process batch waste streams.) (Permit Attachment B Section B-1a ~~Attachment B Introduction~~)					
2	Are procedures in place to ensure that the generator/storage site assigns one of the Summary Category Groups (S3000-homogeneous solids, S4000-soils/gravel, S5000-debris waste) to each waste stream? (Section B-1b)					
3	Are procedures in place to ensure that the generator/storage site assigns Waste Matrix Code Groups (or Final Waste Forms) (e.g., solidified inorganics, solidified organics, salt waste, soils, combustible, filter, graphite, heterogeneous debris, inorganic nonmetal, lead/cadmium metal waste, uncategorized metal) to each waste stream? (~~Attachment B Introduction,~~ Section B-1b)					
4	Are procedures in place to ensure that the generator/storage site assigns a Waste Stream WIPP Identifier (ID) to each waste stream? (Section B3-11g ~~B-1d~~)					
5	Are procedures in place to ensure that the generator/storage site divides waste streams into waste stream lots if all of the waste within a waste stream is not available for sampling and analysis at one time? If so, is the division of waste streams into waste stream lots based on staging, transportation and handling issues? (Section B-1a)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
6	Are procedures in place to ensure that the generator/storage site assigns USEPA hazardous waste codes associated with the waste? If so, do these assigned USEPA hazardous waste codes correspond to the permitted USEPA hazardous waste codes on the Part A? Are there any assigned USEPA hazardous waste codes that are not permitted USEPA hazardous waste codes on the Part A? If so, did the generator/storage site reject the waste for shipment to and disposal at WIPP? ~~(Section B-1b)~~ Did the generator assign a state hazardous waste code? If so, is it assigned to waste that is permitted at WIPP? (Permit Attachment B Introduction)					
7	Are procedures in place to ensure that Summary Category Groups are defined as follows: S3000- Homogenous solids or solid process residues, excluding soils, that do not meet NMED criteria for classification as debris and are at least 50 percent by volume solid process residues, or comprise the majority of the waste stream S4000- Waste streams that are at least 50 percent by volume soil/gravel, or comprise the majority of the waste stream S5000- Waste streams that are at least 50 percent volume materials that meet the NMED criteria for debris, or comprise the majority matrix of materials. The criteria for debris are solid materials intended for disposal that exceed 2.36 inch particle size and is a manufactured object, plant or animal matter, or natural geologic material. Particles smaller than 2.36 inches in size may be considered debris if the debris is a manufactured object and if it is not a particle of S3000 or S4000 material. (Permit Attachment B Section B-1b ~~Attachment B-Introduction~~)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
8	Does the generator/storage facility have procedures in place to ensure that the following waste analysis parameters will be characterized: • Confirmation of physical form and exclusion of prohibited items • Toxicity characteristic contaminants listed in 20.4.1.200 NMAC ~~4.1.200~~ Table 1 (excluding pesticides) as specified in Permit Attachment O • Listed waste ~~F-listed and P-listed solvents or wastes (F001, F002, F003, F004, F005, F006, F007, F009, P015)~~ found in 20.4.1.200 NMAC ~~4.1.200~~ as specified in Permit Attachment O • Hazardous constituents as included in 20.4.1.200 NMAC ~~4.1.200~~ Appendix VIII as specified in Tables B-1, B-3, and B-4, as well as any other hazardous constituent identified through acceptable knowledge (Section B-2)					
9	Are procedures in place to ensure that waste streams identified to contain incompatible materials or materials incompatible with waste containers cannot be shipped unless treated to remove the incompatibility? (Module II. ~~Section B-1e~~)					
10	Are procedures in place to ensure that the generator/storage site uses acceptable knowledge, headspace-gas sampling and analysis, radiography (and/or visual examination), and homogeneous waste sampling and analysis as specified in Table B-6? (Section B-3)					
11	Are procedures in place to ensure that waste is characterized in groups or batches, if necessary? (sampling batches of up to 20 samples collected within 14 days of the first sample, analytical batches of up to 20 samples received within 14 days of first sample receipt, and on-line batches collected within 12 hours and analyzed in accordance with the method requirement) (Section B-3)					
	UNACCEPTABLE WASTE					
12	Are procedures in place to ensure that the generator/storage site ensures, through administrative and operational procedures and characterization techniques, that waste containers do not include the					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	following unacceptable waste: • liquid waste (waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers shall contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any payload container may not exceed 1 percent volume of that container) • non-radionuclide pyrophoric materials • hazardous wastes not occurring as co-contaminants with TRU wastes (non-mixed hazardous wastes) • wastes incompatible with backfill, seal and panel closures materials, container and packaging materials, shipping container materials, or other wastes • wastes containing explosives or compressed gases • wastes with polychlorinated biphenyl (PCB) concentrations equal to or greater than 50 parts per million • wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (EPA Hazardous Waste Numbers of D001, D002, or D003) • RH TRU mixed waste (waste with a surface dose rate of 200 millirem per hour or greater) • any waste container that does not have VOC concentration values reported for the headspace • any waste container which has not undergone either radiographic or visual examination • any waste container from a waste stream which has not been preceded by an appropriate, certified Waste Stream Profile					

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		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	Form (see Section B3-12b ~~B-1d~~) (Module II ~~Section B-1e~~)					
13	Are procedures in place to ensure that the generator/storage site uses radiography, visual examination, headspace gas analysis and, as applicable, solids sampling, to confirm the absence of the unacceptable waste listed above? (Section B-2 ~~B-3~~)					
	WASTE ACCEPTANCE CONTROL					
14	Are procedures in place to ensure that the generator/storage site uses a Waste Stream Profile Form (WSPF) which includes, at a minimum, the information indicated on the attached WSPF found in Figure B3-1? A Waste Stream Profile Form need not be submitted for subsequent waste stream lots unless warranted by the characterization information. (Sections B-1a, B3-11f ~~B-1d~~)					
15	Are procedures in place to ensure that WSPFs are provided to WIPP and NMED for each waste stream prior to acceptance for disposal at the WIPP? (Sections B3-11f, B3-12b ~~B-1d~~)					
16	Are procedures in place to ensure that additional WSPFs are provided to WIPP and NMED for waste streams or portions of waste streams that are reclassified based upon waste characterization information? (Section B3-11e, B3-12b ~~B-1d~~)					
	LABORATORY QUALIFICATION					
17	Are procedures in place to ensure that the generator/storage site conduct analyses using laboratories that are qualified through participation in the Performance Demonstration Program (PDP) for headspace gas sampling and analysis, and PDP homogeneous waste sampling and analysis? (Section B3-1c ~~B-3a(3)~~)					
18	Are procedures in place to ensure that the generator/storage sites conduct analyses using laboratories that implement the analytical methods through laboratory-documented standard operating procedures (SOPs) that ensure that analytical QAOs are met? (Section B3-1c ~~B-3a(3)~~)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
19	Are procedures in place to ensure that documented laboratory QA/QC programs include the following: • Facility organization • List of equipment/instrumentation • Operating procedures • QA/QC procedures • Quality assurance review • Laboratory records management (Section B3-1c ~~B-4a(4)~~)					
	GENERAL SAMPLING AND ANALYTICAL REQUIREMENTS					
20	Are procedures in place to ensure that headspace gas sampling and analysis shall be used to: • Determine the types and concentrations of VOCs in the void volume of waste containers • Ensure that there are no adverse worker or public health impacts • VOC constituents shall be compared to those assigned by Acceptable Knowledge and assign hazardous waste codes as warranted (Section B-3a(1))					
21	Are procedures in place to ensure that each TRU waste container or statistically selected containers from waste streams that meet the conditions for reduced headspace gas sampling will be sampled and analyzed according to sampling protocols, equipment, and QA/QC methods as specified in Attachment B1? (Section B-3a(1))					
22	Are procedures in place to ensure that compounds not on the list of target analytes are reported as tentatively identified compounds (TIC) according to SW-846 TIC identification guidance and that the TIC will be added to the target headspace gas analyte list if it appears in the 20.4.1.200 NMAC ~~4.1.200~~ (incorporating 40 CFR Part 261) Appendix VIII list and if they are detected in 25% of the samples from a given waste stream? (Sections B-3a(3)(a), B-3a(3)(b) ~~B-3a(1)~~)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
23	Are procedures in place to ensure that a randomly selected set of samples will be collected through core sampling or other EPA approved representative methods from the population of waste containers for homogeneous and soil/gravel waste streams? Are procedures in place that a sufficient number of samples are collected to evaluate the toxicity characteristic of a waste stream at a 90 percent Upper Confidence limit as specified in Attachment B2? (Section B-3a(2))					
24	Are procedures in place to ensure that total analyses or TCLP of PCBs, VOCs, SVOCs, and Metals are performed on all core samples to determine if the waste exhibits a toxicity characteristic? (Section B-3a(2))					
25	Are procedures in place to ensure that Acceptable Knowledge is used in waste characterization activities to delineate TRU waste streams, to assess whether TRU debris waste exhibits a toxicity characteristic, and to assess whether TRU wastes are listed? (Section B-3b)					
26	Are procedures in place to ensure that radiography and/or visual examination are used to: • Examine every waste container to determine the physical form of the waste • Identify liquids and containerized gases • Verify the physical form of the waste matches the waste stream description (Section B-3c)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
27	Are procedures in place to ensure that the following characterization activities shall occur for newly generated wastes: • Acceptable Knowledge for all wastes, with confirmatory: - Visual examination during packaging for all waste containers - Headspace gas analysis for all waste containers or randomly selected containers from waste streams that meet the conditions for reduced headspace gas sampling listed in Attachment B, Section B-3a(1) - Total VOC, SVOC, and Metals analyses for a selected number of homogeneous solids and soil/gravel waste containers for control charting purposes (annually thereafter), as specified in Attachment B2 - Evaluation of any TICs found in headspace gas and totals analyses (Sections B-3d(1), B-3d(1)(a), B-3d(1)(b), B-3a(3)(a))					
28	Are procedures in place to ensure that the following characterization activities shall occur for retrievably stored wastes: • Acceptable Knowledge for all wastes, with confirmatory: - Visual examination or radiography for all waste containers - Confirmatory visual examination of a statistically determined number of waste containers as specified in Attachment B2 (when radiography is performed) - Headspace gas analysis for all waste containers or randomly selected containers from waste streams that meet the conditions for reduced headspace gas sampling listed in Attachment B, Section B-3a(1) - Total VOC, SVOC, and Metals analyses for a statistically selected number of homogeneous solids and soil/gravel waste containers as specified in Attachment B2 (containers opened for sampling may be used to fulfill the visual examination requirements) - Evaluation of any TICs found in headspace gas and totals analyses (Sections B-3d(2), B-3a(3)(a))					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
29	Are procedures in place to ensure that the following characterization activities shall occur for repackaged waste: • Acceptable Knowledge, with confirmatory: - Visual examination during repackaging for all waste containers - Headspace gas analysis for all waste containers or randomly selected containers from waste streams that meet the conditions for reduced headspace gas sampling listed in Attachment B, Section B-3a(1) - Total VOC, SVOC, and Metals analyses following either the retrievably stored or newly generated waste characterization process, whichever results in greater sampling requirements - Evaluation of any TICs found in headspace gas and totals analyses (Sections B-3d, B-3d(1), B-3d(1)(a), B-3d(1)(b), B-3a(3)(a))					
	DATA GENERATION, VERIFICATION, VALIDATION, DOCUMENTATION, AND QUALITY ASSURANCE					
30	Are procedures in place to ensure that the following Data Quality Objectives are met: • Use Headspace gas sampling and analysis to identify and quantify VOCs to ensure compliance with the environmental compliance standards of 20.4.1.500 NMAC ~~4.1.500~~ and to confirm hazardous waste identification by Acceptable Knowledge • Perform totals analyses of homogenous solids and soils/gravel wastes to establish if the waste is hazardous based on the toxicity characteristics levels in 20.4.1.200 NMAC ~~4.1.200~~ through a comparison of the upper confidence limits (UCL_{90}) of the mean concentrations to confirm hazardous waste characterization by Acceptable Knowledge • Perform totals analyses of homogenous solids and soils/gravel wastes to report the average concentration of hazardous					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	constituents in a waste stream as a function upper confidence limits (UCL_{90}) of the mean concentrations, with all averages greater than the PRQL ~~MDL~~ considered a detection and subsequent assignment, as applicable, of a hazardous waste code, and as specified in 20.4.1.200 NMAC~~.4.1.200~~ to confirm hazardous waste characterization by Acceptable Knowledge • Use radiography or visual examination to verify physical waste form, identify prohibited items, verify determination of sampling and analytical requirements, and to confirm waste stream delineation by Acceptable Knowledge • Use visual examination as a process check of radiography (Section B-4 ~~B-4a(1)~~)					
31	Are procedures in place to ensure that the following Quality Assurance Objectives are adequately defined and assessed for each characterization method: • Precision as a measure of the mutual agreement among multiple measurements • Accuracy as the degree of agreement between a measurement results and a true or known value • Completeness as a measure of the amount of valid data obtained from a method compared to the total amount of data obtained • Comparability as the degree to which one data set can be compared to another data set (Section B3-1b ~~B-4a(2)~~)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
32	With respect to data generation, are procedures in place to ensure that the generator/storage site's waste characterization program meets the following general requirements: • Analytical data packages and batch data reports must be reported accurately in a pre-approved format, must be maintained in permanent files, and must be traceable? • All data must receive a technical review by an Independent Technical Reviewer? • All data must receive a technical review by ~~another qualified analysts or~~ the technical supervisor~~,~~ and the ~~laboratory~~ QA officer or electronic data review? • All raw data must be reviewed and have the release ~~signatures~~ of a Site Project QA Officer and Site Project Manager or electronic data review accompanied by release from Site Project Manager ~~technical supervisor and a QA officer before release~~? (Sections B3-10a, B-6c, B3-10d, B3-10e, B3-10f, B3-11b, B3-11c, B3-13 ~~B-4(a)(4), B-3) Section B3-10~~)					
33	Are procedures in place to ensure that the generator/storage site performs data validation and verification of waste characterization data for each waste container? (Section B3-1a ~~B-4~~)					
34	Are procedures in place to ensure that the generator/storage site has a pre-approved format for reporting waste characterization data? (Section B3-10a ~~B-4a(4)~~)					
35	Are procedures in place to ensure that the generator/storage site prepares analytical, testing, and sampling batch data reports to meet the requirements of their own site-specific documentation ~~QAPjP and/or SOPs~~? (Section B3-10a ~~B-4a(4)~~)					
36	Are procedures in place to ensure that all raw data is collected and managed at the D~~d~~ata G~~g~~eneration L~~l~~evel in accordance with the following criteria:					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	• All raw data shall be signed and dated in reproducible ink by the individual collecting the data, or unalterable electronic approvals may be used ~~signed and dated using electronic signatures~~ • All data shall be recorded clearly, legibly, and accurately in field and laboratory records and include all applicable sample identification numbers • All changes to manual records ~~original data~~ shall be lined out, initialed, and dated by the individual making the change. Original data may not be obliterated or otherwise be made unreadable • Corrections to electronic records shall indicate the individual making the change, field changed, reason for the change, and change made. Data changes shall only be made by the individual who originally collected the data or an individual authorized to change the data • All data shall be transferred and reduced from field and laboratory records completely and accurately • All field and laboratory records shall be maintained as specified in Table B-7 of Attachment B • Data shall be organized into standard reporting formats for each method of analysis • All electronic and video data are stored to ensure that waste container, sample and QC data are readily retrievable (Section B-6a ~~B3-10~~)					
37	Are procedures in place to ensure that 100 % of batch data reports are subject to Independent ~~non-programmatic~~ technical review by an individual qualified to review the data. The reviewer shall release the data ~~through signature~~ with an associated review checklist prior to					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	~~characterization of the associated waste and shipment to~~ management, storage, or disposal of the associated waste at the WIPP. The review shall ensure the following, as applicable: • Data were generated according to the methods used and reported in the proper units and significant figures • Calculations have been verified by a valid calculation program, a spot check of verified calculation programs, and/or a 100 percent check of all hand calculations • The data have been reviewed for transcription errors • The testing, sampling, and analytical QA documentation is complete and includes raw data, calculation records, chain of custody forms, calibration records, and QC sample results • All QC sample results are within established control limits, and if not, the data has been appropriately qualified • Reporting flags were assigned correctly • Sample holding times and preservation requirements were met, or exceptions documented • Radiography tapes have been reviewed as required in Permit Attachment B, Section B1-3b(2) ~~are reviewed on a waste container basis at a minimum of once per testing batch or once per day of operation, whichever is more frequent. The radiography tape will be reviewed against the data on the radiography form to ensure that data are complete and correct~~ (Permit Attachment B3, Section B3-10d)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
38	Are procedures in place to ensure that 100 percent of all batch data reports receive a technical supervisory signature release with an associated review checklist prior to ~~characterization of the associated waste and shipment to~~ management, storage, or disposal of the associated waste at the WIPP~~P~~, unless an electronic data evaluation system is used, in which case technical supervisor review is not required. This release shall ensure the following: • The data are technically reasonable based on the technique used • All data have received Independent ~~non-programmatic~~ technical review • The testing, sampling, and analytical QA documentation is complete and includes raw data, calculation record, chain of custody forms, calibration records, and QC sample results • Sample holding time requirements were met, or exceptions documented • Field Sampling records are complete If the generator/storage site uses an electronic data evaluation system, did the Independent Technical Review ensure the data are technically reasonable based on the technique used? (Section B3-10d, B3-10e)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
39	Are procedures in place to ensure that 100 percent of all batch data reports receive a QA Officer ~~signature~~ release with an associated review checklist prior to ~~characterization of the associated waste and shipment to~~ management, storage, or disposal of the associated waste at the WIPP, unless an electronic data evaluation system is used, in which case QA officer review is not required. This release shall ensure the following: • ~~Non-programmatic technical and~~ technical supervisory and Independent Technical review have been performed and documented through release ~~signature~~ • QAO's have been met • Sampling and QC Checks have been properly performed and all QC outliers have been identified • The ~~testing, sampling, and~~ QA documentation is complete (Sections B3-10e, B3-10f, B3-11a ~~B3-10~~)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
40	Are procedures in place to ensure that 100 percent of all batch data reports receive a Site Project Manager ~~signature~~ release with an associated review checklist prior to ~~characterization of the associated waste and shipment to~~ management, storage, or disposal of the associated waste at the WIPP. If an electronic data evaluation system is used, the Site Project Manager will instead review the Electronic Data Evaluation Report and release the data. This release shall ensure the following: • ~~Non-programmatic technical reviews,~~ technical supervisory and Independent Technical reviews, and QA Officer reviews have been performed and documented through checklists and appropriate releases ~~signature~~ • Data have been verified to be within established data assessment criteria and meet all applicable QAOs • ~~Sampling, testing, and analytical batches are complete and data are reported to the correct units, qualifier flags, and significant figures.~~ • ~~The testing, sampling, and QA data review checklists are complete~~ (Section B3-11c ~~B3-10~~)					
41	At the project level, are procedures in place to ensure that 100 percent of all batch data reports shall have a Site Project QA Officer ~~signature~~ release with an associated review checklist prior to ~~characterization of the associated waste and shipment to~~ management, storage, or disposal of the associated waste at the WIPP. This release shall ensure the following: • Batch Data Reports are complete and data are properly reported (i.e., data are reported in correct units, and, if applicable, with correct qualifying flags) • Sampling batch QC checks (e.g., equipment blanks, field duplicates, field reference standards) were properly performed,					

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		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	meet the established QAOs, and are within established data useability criteria • Testing batch QC checks (e.g., replicate scans, measurement system checks) were properly performed. Radiography data are complete and acceptable based on evidence of videotape review as specified in B1-3b(2) • Analytical batch QC checks (e.g., laboratory duplicates, laboratory blanks, matrix spikes, matrix spike duplicates, laboratory control samples) were properly performed and meet the established QAOs and are within established data useability criteria • On-line batch QC checks (e.g., field blanks, on-line blanks, on-line duplicates, on-line control samples) were properly performed and meet the established QAOs and are within established data useability criteria • The ITR has verified that proper procedures were followed to ensure representative samples of headspace gas and homogeneous solids and soil/gravel were taken • ~~Sampling batch field QC checks were properly performed and meet established QAOs and data usability criteria~~ ~~• Testing batch QC checks were properly performed~~ ~~• Analytical batch and on-line QC Checks were properly performed and meet established QAOs and data usability criteria~~ ~~• Radiography data are complete and acceptable~~ ~~• Data are properly reported (i.e., correct units, correct significant figures, and appropriate qualifier flags)~~ ~~• Proper procedures were used to ensure that representative~~					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	~~headspace gas and core samples were collected~~ If an electronic data evaluation system is used, the Site Project QA Officer will instead ensure that any required nonconformance reports are prepared. (Sections B3-11a, B3-11b ~~B3-10~~)					
42	~~Are procedures in place to ensure that a repeat of the data review process at the data generation level will be performed on a minimum of one randomly chosen waste container every quarter to determine if the verification and validation is performed according to documented procedures? (Section B3-10)~~					
43	Are procedures in place and checklists are available to prepare a Site Project QA Officer Summary and a Data Validation Summary (the summaries may be in the same document)? The QA Officer Summary should include~~, on a waste container basis,~~ a validation checklist for each batch data report that is of sufficient detail to document all aspects of the ~~testing, sampling, and analytical~~ batch data report that could affect data quality. The Data Validation Summary should confirm that all data were validated according to site QAPP requirements, indicate ~~analytical~~ batche~~s~~ data report reviewed, identify all problems, and include a statement that all data are acceptable ~~identify all acceptable and unacceptable data~~. (Section B3-11a ~~B3-10~~)					
44	Are procedures in place to ensure that non-administrative, WAP-related nonconformances first identified at the site project manager level are reported to the Permittees within five (5) calendar days of identification, that nonconformance reports are prepared within thirty (30) calendar days, and that corrective action is implemented prior to waste shipment? (Section B3-14 ~~B3-1, B3-13~~)					
45	Are procedures in place to ensure that nonconformances are appropriately identified, reconciled, corrected, and documented? Are nonconformance reports prepared for nonconformances identified? Are nonconformances identified and tracked, and does the site Project QA Officer oversee the nonconformance report process? (Section B3-14 ~~B3-13~~)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	SAMPLE CONTROL					
46	Are procedures in place to ensure that the site's sample handling and control program includes the following: • Field documentation of samples including point of origin, date of sample, container identification, sample type, analysis requested, and chain-of-custody (COC) number? • Proper labeling and/or tagging including proper sample numbering, sample identification, sample date, sampling conditions, and analysis requested? This requirement may also be addressed through the use of barcodes. • COC record including name of sample relinquisher, sample receiver, and date and time of sample transfer? and • Proper sample handling and preservation? (Section B3-1d ~~B-4a(3)~~)					
47	Are procedures in place to ensure that the site's QAPjP or site-specific procedures includes COC forms to control the sample from the point of origin to the final analysis result reporting? (Section B3-1d ~~B-4a(3)~~)					
	DATA TRANSMITTAL					
48	Are procedures in place to ensure that the generator/storage site transmits data by hard copy or electronic copy from the D~~d~~ata G~~g~~eneration L~~l~~evel to the S~~s~~ite P~~p~~roject L~~l~~evel after all D~~d~~ata G~~g~~eneration and Site P~~p~~roject L~~l~~evel validations are complete? If electronic, does the generator/site have a hard copy available on demand? (Section B3-10a ~~B-4a(6)~~)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
49	~~Are procedures in place to ensure that the data transmitted from Level 1 to Level 2 include the following:~~ ~~• testing data reports for each waste container?~~ ~~• sampling data reports for each waste container sampled?~~ ~~• analytical data reports for each waste container sampled? and~~ ~~• data review checklists~~ ~~(Section B-4a(6))~~					
50	Are procedures in place to ensure that the generator/storage site inputs the data into the WWIS manually or electronically? (Section B-6b ~~B-4a(6)~~)					
51	Are procedures in place to ensure that the generator/storage site enters the data into the WWIS in the exact format required by the database? (Section B-6b ~~B-4a(6)~~)					
52	Are procedures in place to ensure all of the data presented on Table B-8 of the Permit is transmitted to the WWIS? (Table B-8)					
53	~~Are procedures in place to ensure that the generator/storage site reports summarize waste characterization information on a waste stream basis, and transmits the summarized data by hard copy or electronically to WIPP Waste Operations when requested? (Section B-4a(6))~~					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
54	~~Are procedures in place to ensure that the generator/storage site's Batch Data Reports are reviewed at the project level and include the following information:~~ ~~• Site name?~~ ~~• Program identification?~~ ~~• Waste container numbers?~~ ~~• Release signatures from the Site Project Manager and the Site Project QA Officer? and~~ ~~• A concise narrative summarizing the results of the site project level review?~~ ~~(Section B3-10) (Section B3-12)~~					
	RECORDS AND RECORD MANAGEMENT					
55	Are procedures in place to ensure that the generator/storage site's hard copy and/or electronic data reports follow the Permittees format requirements? (Section B-6a ~~B-4a(6)~~)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
56	Are procedures in place to ensure that hard copy or electronic Waste Stream Profile Form and Characterization Information Summary will include the following: Waste Stream Profile Form: • Generator/storage site name • Generator/storage site U.S. Environmental Protection Agency (EPA) Identification (ID) Number • Date of audit report approval by New Mexico Environment Department (NMED) (if obtained) • Original generator of waste stream • The waste stream WIPP identification number • A description of the waste stream • Summary Category Group • Waste Matrix Code Group • Waste stream name • Applicable EPA hazardous waste codes • Applicable Transuranic Content (TRUCON) codes • A listing of acceptable knowledge documentation used to identify the waste stream • The waste charcterization procedures used and the reference and date of the procedure. • Certification signature of Site Project Manager, name, title, and date signed (Section B3-11f ~~B3-12~~)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	Characterization Information Summary: • Data reconciliation with DQOs • Headspace gas summary data listing the identification numbers of samples used in the statistical reduction, the maximum, mean, standard deviation, UCL_{90}, RTL, and associated EPA hazardous waste codes that must be applied to the waste stream. • Total metal, VOC, and SVOC analytical results for homogeneous solids and soil/gravel (if applicable) • TIC listing and evaluation and verification that AK was confirmed. • Radiography and VE summary to document that all prohibited items are absent in the waste and to confirm AK. • A complete listing of all container identification numbers used to generate the WSPF, cross referenced to each Batch Data Report • Complete AK summary including waste stream name, waste stream identification number, point of generation, waste stream volume (current and projected), generation dates, TRUCON codes, Summary Category Group, Waste Matrix Code(s), and Waste Matrix Code Group, other Transuranic Waste Baseline Inventory Report (**TWBIR**) information, waste stream description, areas of operation, generating processes, RCRA determinations, radionuclide information, and all references used to generate the AK summary, and any other information required by Permit Attachment B4, Section B4-2b. ~~Are procedures in place to assure that ongoing container characterization results are cross reference to Batch Data Reports?~~ (Section B3-11g ~~B3-12b(2)~~)					
57	Are procedures in place to ensure that the generator/storage site's data reports describe any problems or noteworthy observations (e.g., non-conformance reports)? (Section B3-14 ~~B-4a(6)~~)					
58	Are procedures in place to ensure that project level reports are compiled into Characterization Information Summaries (Section B3-11g ~~B3-12b~~)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
59	Are procedures in place to ensure that the generator/storage site uses forms for data reporting that are pre-approved forms in site-specific documentation? (Section B-6a ~~B3-12~~)					
60	Are procedures in place to ensure that the generator/storage site's site project manager submits to the WIPP facility a summary of the waste stream information and reconciliation with data quality objectives (DQOs) once a waste stream is fully characterized? (Sections B3-11f, B3-11g ~~B-4a(6)~~)					
61	Are procedures in place to ensure that the generator/storage Site Project Manager completes a WSPF based on the Data Reports? (Section B3-11f ~~B-4a(6)) (B3-12b(1)~~)					
62	Are procedures in place to ensure that the generator/storage Site Project submits the WSPF to the Permittees for approval along with the accompanying Characterization Information Summary for that waste stream? (Section B3-11f ~~B-4a(6)) (B3-12b(1)~~)					
63	Are procedures in place to ensure that the generator/storage site maintains records related to waste characterization sampling and analysis activities in the testing, sampling or analytical facilities files, or site project files for those facilities located on-site? (Section B-6c ~~B-4a(7)~~)					
64	Are procedures in place to ensure that the appropriate documented training and indoctrination is performed for all individuals and that procedures are documented in site specific QAPjPs and procedures? (Section B3-15 ~~B3-14~~)					
65	Are procedures in place to ensure that the generator/storage site requires contract waste analytical facilities to forward testing, sampling and analytical QA documentation along with testing, sampling and analytical batch data reports to the site project office for inclusion in the site central files? (Section B-6c ~~B-4a(7)~~)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
66	Are procedures in place to ensure that the generator/storage site has an appropriate records inventory and disposition schedule (RIDS) or equivalent that was prepared and approved by appropriate site personnel? (Section B-6c ~~B-4a(7)~~)					
67	Are procedures in place to ensure that the generator/storage site maintains all records relevant to an enforcement action, regardless of disposition, until they are no longer needed for enforcement action, and then dispositioned per the approved RIDS? (Section B-6c ~~B-4a(7)~~)					
68	Are procedures in place to ensure that the generator/storage site maintains records that are designated as Lifetime Records for the life of the waste characterization program plus six years, and then offer those records to the Permittees or transferred to the appropriate Federal Records Center (FRC)? Lifetime Records include: • Field sampling data forms, • Field and laboratory COC forms, • Test facility and laboratory Batch Data Reports, • ~~Waste Stream Characterization Package~~, • Sampling plans, • Data reduction, validation, and reporting documentation, • Acceptable knowledge documentation, • Data Validation Summary ~~Data reconciliation report~~, and • WSPF and Characterization Information Summary (Section B-6c ~~B-4a(7)~~, Table B-7)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
69	Are procedures in place to ensure that the generator/storage site maintains records that are designated as Non-Permanent Records for ten years from the date of record generation, and then dispositioned according per the approved RIDS? Non-Permanent Records include: • Nonconformance documentation, • Variance documentation, • Assessment documentation, • Gas canister tags, • Methods performance documentation, • PDP documentation, • Sampling equipment certifications, • Calculations and related software documentation, • Training/qualification documentation, • QAPjP documentation (all revisions), • Calibration documentation, • Analytical raw data, • Procurement documentation, • QA procedures (all revisions), • Technical implementing procedures (all revisions), and • Audio/video recording (radiography, visual, etc.). (Section B-6c ~~B-4a(7)~~, Table B-7)					
70	Are procedures in place to ensure that the generator/storage site has raw data that is identifiable and legible, and provides documentary evidence of quality? (Section B-6c ~~B-4a(7)~~)					
71	Are procedures in place to ensure that if the generator/storage site ceases to operate, that all records be transferred before closeout? (Section B-6c ~~B-4a(7)~~)					
	SHIPMENT					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
72	Are procedures in place to ensure that the generator/storage site accurately completes an EPA Hazardous Waste Manifest prior to shipping the waste to WIPP that contains the following information: • Generator site name and EPA ID • Generator site contact name and phone number • Quantity of waste • List of hazardous waste codes in shipment • Listing of all container Ids • Signature of authorized generator representative (Section B3-12c ~~B-4b(2)~~)					
73	Are procedures in place to ensure that the generator/storage site accurately completes the following container specific information: • Waste stream identification number • List of hazardous waste codes per container • Certification data • Shipping data (Section B3-12c ~~B-4b(2)(i)~~)					
74	Are procedures in place to ensure that all applicable waste characterization techniques specified in Attachment B are used by the generator/storage site to delineate the waste on a waste stream basis? (Attachment B Introduction)					
Electronic Data Evaluation						

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
74a	If the generator/storage site utilizes an electronic data evaluation system, does the system address the following items: Proper data generation and reduction • Correct calculations • QA documentation is complete • QC sample results are within limits • Reporting flags were assigned correctly • Holding time and preservation requirements were met • Radiography tapes have been reviewed as required • On-line field sampling records are complete • QAOs were met • Batch Data Reports are complete (Permit Attachment B3 Section B3-13)					
74b	If the generator/storage site utilizes an electronic data evaluation system, was the electronic system developed in compliance with "Quality Assurance Requirements of Computer Software for Nuclear Applications (NQA-2)" (ASME, 1994)? Prior to implementation of the electronic system, did the generator/storage site must submit the following items (required by NQA-2) to CBFO for review and approval: • Software Quality Assurance Plan • Software Requirements Documentation • Software Design and Implementation Documentation • Software Verification and Validation Documentation • User Documentation (Permit Attachment B3, Section B3-13)					
74c	If the generator/storage site utilizes an electronic data evaluation system, does the electronic system include a Change Log/Report, which contains the following items: • Changed by • Fields changed • Reason for the change • Change made Is the Change Log/Report available upon request? (Permit Attachment B3, Section B3-13)					

	Wap Requirement	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
74d	If the generator/storage site utilizes an electronic data evaluation system, is an Electronic Data Evaluation Report issued following completion of the automated electronic review, validation, and verification activities? Are site-specific procedures in place that specify the format of the Electronic Data Evaluation Report? Does the Electronic Data Evaluation Report reference the data evaluated, any incomplete information resulting in inability to complete the electronic data evaluation, and any nonconforming data requiring follow up under the nonconformance process? Are procedures in place to ensure that the Electronic Data Evaluation Report and accompanying results are released by the Site Project Manager before any waste associated with the data reviewed is managed, stored, or disposed at WIPP?					

Proposed Changes to Tables B6-2 through B6-6

Note: For Tables B6-2 through B6-6, only changed items are included.

Reference	Affected Text
Table B6-2, Item 123	Are procedures in place to ensure that only laboratories that are qualified through participation in the Performance Demonstration Program are eligible to analyze waste samples? (Section B3-1c ~~B-4a~~)
Table B6-2, Item 126	Are procedures documented to ensure that Tentatively Identified Compounds shall be added to the target compound list if they are identified in 25% of the samples in accordance with SW-846 criteria for a given waste stream, if they are not a listed waste constituent attributable to waste packaging or radiolysis (with the exception of non-toxic F003 constituents), and if they appear in the 20.4.1.200 NMAC ~~.4.1.200~~ (incorporating 40 CFR §261) Appendix VIII list? (Sections B-3a(1)(a), B-3a(1)(b) ~~B-3a(1)~~)
Table B6-3, Item 151	Has the generator site implemented administrative controls to ensure that prohibited items are documented and managed in accordance with site specific certification plans and that the following minimum site specific administrative controls: • Identify the organization(s) responsible for compliance with administrative controls. • Identify the oversight procedures and frequency of actions to verify compliance with administrative controls. • Develop on-the-job training specific to administrative control procedures. • Ensure that personnel may stop work if noncompliance with administrative controls is identified. • Develop a nonconformance process that complies with the requirements in Section B3-14~~3~~ of the WAP to document and establish corrective actions. • Address controlled changes to WAP-related plans or procedures as part of the nonconformance and corrective action process • As part of the corrective action process, assess the potential time frame of the noncompliance, the potentially affected waste population(s), and the reassessment and recertification of those wastes. (Section B4-3b, Section B3-14 ~~B3-13~~)

Reference	Affected Text
Table B6-4, Item 184	Are procedures in place to ensure all containers of waste are properly vented through individual carbon composite filters or filters with equivalent VOC dispersion characteristics to ensure that gases are adequately vented and characteristic waste does not develop? (Permit Attachment M1 ~~Section B-1c~~)
Table B6-4, Item 209	Do sample tags or labels contain the following information, or if barcodes are used is this information available electronically: • Sample Description to adequately describe sample location and appearance • Ambient temperature and pressure • Sample identification number • Analyses requested • Date/Time sampled • QC Designation • Sampler's initials and organization (Section B1-4)
Table B6-4, Item 221	Are procedures in place to ensure that only laboratories that are qualified through participation in the Performance Demonstration Program are eligible to analyze waste samples? (Section B3-1c ~~B-3a(3)~~)
Table B6-4, Item 222	Are procedures in place to ensure that Tentatively Identified Compounds shall be added to the target compound list if they are identified in 25% of the samples in accordance with SW-846 criteria for a given waste stream (with the exception of non-toxic F003 constituents) and if they appear in the 20.4.1.200 NMAC ~~.4.1.200~~ (incorporating 40 CFR §261) Appendix VIII list? (Sections B-3a(3)(a), B-3a(3)(b) ~~B-3a(1)~~)
Table B6-5, Item 245	If radiography indicate that the waste does not match the waste stream description, do procedures ensure that the appropriate corrective action was taken? (Section B3-14 ~~B3-13~~)

Reference	Affected Text
Table B6-5, Item 246	If a discrepancy is noted, do procedures ensure that the proper waste stream assignment is determined, the correct hazardous waste codes assigned, and the resolution documented? (Section B3-14 ~~B3-13~~)
Table B6-5, Item 263	Do site procedures ensure that the site prepares separate testing report sheets for each waste container in the testing? (Section B3-4 ~~B3-10~~)
Table B6-5, Item 264	For waste containers undergoing visual examination, does the testing report sheet for each waste container also identify the matrix parameter category, waste material parameter weights as determined by visual examination and prohibited materials? (Section B3-4 ~~B3-10~~)
Table B6-5, Item 276	Do procedures ensure that the generator data, all applicable requirements for data collection and management specified in B3-10 and its subsections, is achieved? With the exception of identifying items or conditions that could pose a hazard, the radiography results are not made available to visual examination personnel until after the visual examination is completed. (Section B1-3b(3) ~~B3-10~~)
Table B6-5, Item 277	Do procedures ensure that all applicable data generation review verification and validation activities specified in B3-10 and its subsections are followed, including all ~~signatory~~ releases? (Section B3-10)
Table B6-5, Item 278	Do procedures ensure that radiography tapes have been reviewed in accordance with Permit Attachment B1 Section B1-3b(2)~~, at a minimum for every tenth waste container, against the data reported on the radiography form~~ to ensure data are correct and completed? (Section B3-10d ~~B3-10~~)
Table B6-5, Item 279	Do procedures ensure that all applicable project-level ~~signatory~~ releases and DQO's (Sections B3-11b, B3-11c ~~B3-11~~) as specified in the WAP are performed (i.e. 100% radiographic or VE examinations, and project-level review of videotape, for one waste container/testing batch, at a minimum, or electronic data evaluation). (Sections B3-11b, B3-13 ~~B3-11~~)
Table B6-5, Item 280	Do procedures ensure that radiographic data for each container is transferred to the WIPP? (Section B3-10c ~~B-1e~~)

Reference	Affected Text
Table B6-5, Item 281	Do procedures ensure that the site submit testing data reports for each waste container? Do these forms go to the site project office? Do they use approved standard forms? (Section B3-10a ~~B3-12~~)
Table B6-5, Item 282	At the D~~d~~ata G~~g~~eneration L~~l~~evel, do procedures ensure that all electronic and video data stored appropriately to ensure that waste container, sample, and associated QA data are readily retrievable? ~~Are radiography tapes reviewed, at a minimum of every tenth waste container against the data reported on the radiography form?~~ (Table B-7 ~~Section B3-10~~)
Table B6-5, Item 283	At the project level, do procedures require the site Project QA officer to certify that the radiography data are complete and acceptable based on the videotape review of at least one waste container per testing batch or daily, whichever is less frequent? Alternately, this may be accomplished using electronic review, validation, and verification system. (Section B3-11b ~~B3-10~~)
Table B6-6, Item 293	Do procedures ensure that the site takes precautions to ensure that corrective actions taken after the containers were visually examined to improve certification accuracy were not used to adjust the visual examination results and the UCL_{90}? (Section B3-14 ~~B3-13~~)

Attachment G: Overview of the United States Environmental Protection Agency's Electronic Reporting Initiative

EPA United States Environmental Protection Agency

Electronic Reporting At EPA: Overview

EC/EDI Overview
Ongoing EC/EDI Projects
Implementation Guidelines
Electronic Reporting Policies & Regs
State EC/EDI Steering Committee
EDI Implementation Workgroup
News & Upcoming Events
Articles & White Papers
Links
Training
EC/EDI Home Page

EPA's ELECTRONIC REPORTING INITIATIVE

EPA is working to introduce electronic reporting for all major environmental compliance programs, both for reports submitted directly to EPA and for those submitted to state or local agencies under delegated programs. Short term, our goal is to eliminate the cost to industry and government of using paper to transfer computerized data -- at the same time eliminating the errors and delays involved in 'keystroking' reports into EPA databases. Longer term, our hope is to use electronic reporting as a tool for streamlining and automating the exchanges of data among industry, environmental agencies and the public.

Our strategy at the outset has been to focus on high volume (and high cost) EPA reports and the larger companies that submit the lion's share of data under most EPA programs. The approach of choice is here is 'electronic data interchange' (EDI), which dominates electronic commerce among large companies in the US, and allows EPA to tap into existing private-sector infrastructure and expertise. However, as environmental EDI gets underway, we plan to extend our reach to smaller companies by looking to the tools of electronic commerce (EC) as they are emerging in conjunction with the World Wide Web. Under both of these approaches, our commitment is to base environmental electronic reporting on national, public-domain data models and formats that provide the foundation for open systems data exchange.

The links on this home page cover every aspect of EPA's EC/EDI Initiative. Ongoing EC/EDI Projects provides current information on the specific environmental program/reports where we offer or are working on electronic reporting, including the discharge monitoring report (Clean Water Act/National Pollutant Discharge Elimination System), the hazardous waste manifest, safe drinking water laboratory reports (submitted by municipal water systems), air emissions inventory reports, and several others. Included as well are some cross-program efforts to use EC/EDI as a tool for streamlining and reengineering the compliance processes. For some of these projects, EDI Implementation Guidelines provides the documents that map EDI (ANSI ASC X12) standard transaction sets to specific EPA reports; Electronic Reporting Policies and Regulations provides the current legal framework for the cases where EC/EDI has been implemented.

For EPA, the final EC/EDI legal framework is still being developed through Agency workgroup processes. Documents connected with this effort are available under EDI Implementation Workgroup (EDIIW), and -- as the effort addresses electronic reporting to state/local environmental agencies -- under State EC/EDI Steering Committee. Finally, News and Upcoming Events highlights recent environmental EC/EDI developments, as well as conferences and meetings of general interest,

while Articles and White Papers provides background pieces that elaborate on the technical, legal, and policy bases for EPA's approach to electronic reporting.

Overview | Projects | Guidelines | Policies | SEES | EDIIW | News | Articles | Links | EC/EDI Home | OPPE Home | EPA Home

Email contact

September 5, 1997
www.epa.gov/oppeedi1/overview.htm

Attachment H: Crosswalk of Activities and the Current and Proposed Permit Locations

Activity Level	Activity	Characterization Process	Current Permit Location	Proposed Permit Location
Data Generation Level	Data Collection (No changes to Data Collection activities as part of the Permit Modification Request)	Headspace Gas Sampling	Method: Section B1-1 Quality Assurance Objectives (QAO): Section B3-2	Method: Section B1-1 QAOs: Section B3-2
		Headspace Gas Analysis	Method: Table B-3 QAOs: Section B3-5	Method: Table B-3 QAOs: Section B3-5
		Solids Sampling	Method: Section B1-2 QAOs: Section B3-3	Method: Section B1-2 QAOs: Section B3-3
		Solids Analysis	Method: Table B-4 QAOs: Sections B3-6, 7, and 8	Method: Table B-4 QAOs: Sections B3-6, 7, and 8
		Radiography	Method: Section B1-3 QAOs: Section B3-4	Method: Section B1-3 QAOs: Section B3-4
		Visual Examination	Method: Section B1-3b(3) QAOs: N/A	Method: Section B1-3b(3) QAOs: N/A
	Batch Data Report Preparation	All Processes	Sections B-4a(4), B3-10, and B3-12a	Section B3-10a
	Independent Technical Review	All Processes	Sections B-4a(5) and B3-10a(1)	Section B3-10d
	Technical Supervisor Review	All Processes	Sections B-4a(5) and B3-10a(2)	Section B3-10e
	Quality Assurance Officer Review	All Processes	Sections B-4a(5) and B3-10a(3)	Section B3-10f
Site Project Level	Batch Data Report Site Project Quality Assurance Officer Review	All Processes	Sections B-4a(5) and B3-10b(1)	Section B3-11b
	Batch Data Report Site Project Manager Review	All Processes	Sections B-4a(5) and B3-10b(2)	Section B3-11c
	Reconciliation with Data Quality Objectives	All Processes	Section B3-11a	Section B3-11e
	Waste Stream Profile Form (WSPF) Preparation	All Processes	Sections B-4a(6) and B3-12b(1)	Section B3-11f

Activity Level	Activity	Characterization Process	Current Permit Location	Proposed Permit Location
	Characterization Information Summary Preparation	All Processes	Sections B-4a(6) and B3-12b(2)	Section B3-11g
	WIPP Waste Information System (WWIS) Data Reporting	All Processes	Sections B-4a(6) and B3-12b(4)	Section B3-11i
Permittee Level	WWIS Data Review	All Processes	Sections B-4b(1)(i) and B-4b(1)(ii)	Section B-6b
	WSPF and Characterization Information Summary Review	All Processes	Sections B-4b(1), B-4b(1)(ii), and B3-10c	Section B3-12b
	Shipping Information Review	All Processes	Section B-4b(2)	Section B3-12c