Section 311 Notice of Deficiency Comment Response Matrix

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NMED Transmittal Letter		
L.1	The New Mexico Environment Department (**NMED**) Hazardous Waste Bureau (**HWB**) has reviewed the following document submitted by the U.S. Department of Energy (**DOE**) and Washington TRU Solutions LLC (collectively referred to as the **Permittees**) for administrative completeness and technical adequacy: • Request for Class 3 Permit Modification (Section 311), Letter Dated 1/9/04, Rec'd 1/12/04 This Class 3 permit modification request (**PMR**) is currently being processed by NMED in accordance with the requirements specified in 20.4.1.900 NMAC (incorporating 40 CFR §270.42(c)). This PMR was subject to an initial 60-day public comment period from January 15 until March 15, 2004, which was subsequently extended until March 22, 2004 at the request of the Permittees. At the close of the public comment period, NMED had received comments from 13 individuals and groups totaling approximately 78 pages. NMED also received approximately 1400 yellow post cards from citizens stating opposition to DOE's plans, asking NMED to deny the proposed PMR, and supporting full State authority over WIPP.	The January 9, 2004 Permit Modification Request (PMR) was submitted pursuant to 40 CFR §270.42(c) as a Class 3 Permit Modification and pursuant to Section 311 of the Energy and Water Development Appropriations Act for Fiscal Year 2004, Pub L. 108-137. For clarity, the January 9, 2004 PMR will be referred to as the "Section 311 PMR." After the submission of the Section 311 PMR, Congress passed Section 310 of the Consolidated Appropriations Act, 2005 , Pub. L. 108-447, which states: SEC. 310. (a) The Secretary of Energy was directed to file a permit modification to the Waste Analysis Plan (WAP) and associated provisions contained in the Hazardous Waste Facility Permit for the Waste Isolation Pilot Plant (WIPP). For purposes of determining hereafter compliance of the modifications to the WAP with the hazardous waste analysis requirements of the Solid Waste Disposal Act (42 U.S.C. 6901 et seq.), or other applicable laws waste confirmation for all waste received for storage and disposal shall be limited to: (1) confirmation that the waste contains no ignitable, corrosive, or reactive waste through the use of either radiography or visual examination of a statistically representative subpopulation of the waste; and (2) review of the Waste Stream Profile Form to verify that the waste contains no ignitable, corrosive, or reactive waste and that assigned Environmental Protection Agency hazardous waste numbers are allowed for storage and disposal by the WIPP Hazardous Waste Facility Permit. (b) Compliance with the disposal room performance standards of the WAP hereafter shall be demonstrated exclusively by monitoring airborne volatile organic compounds in underground disposal rooms in which waste has been emplaced until panel closure. The text of Section 311 of the Energy and Water Development Appropriations Act for Fiscal Year 2004 and Section 310 of the Consolidated Appropriations Act, 2005 is the same except for the following revisions in Section 310: o Use of the word "was" rather than "is" in the first sentence of subsection (a), to state: "The Secretary of Energy <u>was</u> directed to file a permit modification...." (emphasis added). o Insertion of the word "hereafter" in the second sentence of subsection (a), to state: "For purposes of determining <u>hereafter</u> compliance of the modifications to the WAP with the hazardous waste analysis requirements of the Solid

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		Waste Disposal Act (42 U.S.C. 6901 et seq.), or other applicable laws…" (emphasis added). Both Section 311 of the Energy and Water Development Appropriations Act for Fiscal Year 2004 and Section 310 of the Consolidated Appropriations Act, 2005, are now relevant to the PMR. Where applicable, the legislation will be referred to in this document as Sections 311/310. On June 28, 2002, the Permittees submitted a Class 3 PMR for Remote Handled (RH) TRU waste (RH PMR). On March 5, 2003, NMED issued a Notice of Deficiency (NOD) for the RH PMR, which the Permittees responded to on May 5, 2003. On March 29, 2005, NMED issued a second RH NOD that directed the Permittees to develop "an approach that addresses both CH and RH waste characterization in a unified manner, through a consolidated response and a revised PMR." NMED also stated that the Permittees may include other proposed changes that were not previously identified in the Section 311 or RH PMRs, including a request for additional storage capacity in the Parking Area Unit and Waste Handling Building Unit and the use of staging areas for waste containers undergoing the acceptance process for storage and disposal. In response to the Section 311 NOD and the second RH NOD, the Permittees are submitting 1) a transmittal letter; 2) a revised PMR that consolidates the Section 311 and RH PMRs, and adds a request for additional storage capacity and the use of staging areas. The revised PMR includes a narrative that contains a summary of primary changes and justifications for the changes, a revised regulatory crosswalk, a revised Table of Changes, and a redline/strikeout version of the HWFP; 3) this NOD Comment/Response Matrix for the Section 311 NOD; and 4) an NOD Comment/Response Matrix for the second RH NOD. These documents, submitted by the Permittees in response to the Section 311 NOD and the RH NOD, provide support for the approval of the revised PMR, pursuant to the requirements for a Class 3 permit modification found in 40 CFR §270.42(c).
L.2	NMED has determined that this PMR, submitted by the Permittees pursuant to Section 311(a) of the Energy and Water Development Appropriations Act for Fiscal Year 2004, Public Law 108-137, is administratively complete. The New Mexico Hazardous Waste Fee Regulations require assessment of fees when administrative review of a document is complete, as specified in 20.4.2.301 NMAC. NMED will issue an invoice to you under a separate letter. Payment is due within sixty (60) calendar days from the date that you receive the invoice. NMED also seeks clarification	As noted above, the documents submitted in response to NMED's comments support the approval of the PMR, as revised in response to NMED's comments, pursuant to 40 CFR 270.42(c). The Permittees agree that the PMR is administratively complete and will pay the invoice as required by the regulatory requirements.

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	from the Permittees regarding their intent to implement the language in Pub. L. 108-137 that states, "the Secretary of Energy is directed to use $1,000,000 of the funds provided for regulatory and technical assistance to the State of New Mexico, to amend the existing WIPP Hazardous Waste Permit to comply with the provisions of section 310 of this Act." After reviewing the PMR, NMED has found it to be technically deficient. The attached Notice of Deficiency (**NOD**) comments list the technical deficiencies that must be corrected before NMED will consider preparing a draft permit. The Permittees clearly have not satisfied the regulatory requirements for a Class 3 modification as detailed in 40 CFR §270.42(c). Specifically, 40 CFR §270.42(c)(1)(iii) requires the Permittees to submit a modification request that "Explains why the modification is needed." The NOD comments, therefore, contain requests for specific information regarding the proposed revisions to the waste analysis plan (**WAP**) and the disposal room performance standards.	The funding will be provided as directed by Congress. The revised PMR being submitted in response to the Section 311 and RH NODs satisfies the regulatory requirements for a Class 3 permit modification pursuant to 40 CFR §270.42(c). The revised PMR explains why the modification is needed and provides a summary of the primary changes and justifications for the changes; the revised Table of Changes identifies each specific change to the permit and provides the justification for each of the proposed changes. The redline/strikeout version of the Permit contains the exact permit changes being requested. The permit modification is consistent with the waste analysis requirements of 40 CFR §264.13, with the requirements of Sections 311/310 and with the changes needed to manage, store and dispose of RH TRU waste at the WIPP facility.
L.3	NMED believes that the Permittees have misconstrued the language from Section 311 of Pub. L. 108-137 to justify the elimination of established waste characterization procedures that were designed to ensure that the WIPP site would not adversely impact human health or the environment over its lifespan. NMED also believes that inaccurate discussions of regulatory and guidance interpretations are used in the PMR to justify the proposed revisions. As a result, the majority of NMED's requests for information and clarification relate to the Permittees' attempted integration of Section 311 with the existing permit, RCRA, and applicable administrative rules and guidance. Issues of concern include, but are not limited to: • The relationship between "confirmation" as used in Section 311 (which is not defined in RCRA) and the statutory and regulatory RCRA waste characterization requirements administered by NMED under its federal RCRA authorization;	The Permittees disagree that they have misconstrued the language in Sections 311/310 and that the PMR contains inaccurate discussions of regulatory and guidance interpretations. As discussed more fully in Response to Comment 1.0, below, the Permittees have not proposed to eliminate or prohibit the use of waste analysis procedures that were designed to ensure that the WIPP site would not impact human health or the environment. The PMR, as revised in response to NMED's comments, requires the generator/storage sites to perform waste analysis prior to acceptance of the waste for disposal at WIPP. In response to NMED's comments, the Permittees are proposing that the generator storage sites perform representative sampling and analysis of the waste streams to obtain supplemental waste analysis information, with the exception that, if NMED determines, at the Permittees' request, that the AK information is adequate for waste analysis, supplemental sampling and analysis would not be required. The proposed changes to the WAP, set forth in the revised PMR and in the Responses to Comments, below, comply with the waste analysis requirements of 40 CFR §264.13 and Sections 311(a)/310(a), are consistent with regulatory guidance and meet the requirements for a Class 3 Permit Modification pursuant to §270.42(c). The Responses to Comments, below, address the specific questions raised by NMED.

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	• The asserted link between "confirmation" as used in Section 311 and the Permittees' attempt through the PMR to rely upon acceptable knowledge as the sole means for waste characterization; • The potential conflict between the PMR's proposed limitation of generator waste characterization responsibility to acceptable knowledge and the regulatory requirements in 40 CFR §262 Subpart A and 40 CFR §264.13; and • The potential for incomplete or inaccurate waste characterization, and the problems that would result from the receipt and/or disposal of these wastes at WIPP NMED also rejects the Permittees' interpretation and application of Section 311(b) regarding disposal room performance standards. Section 311(b) ostensibly re-defines disposal room performance standards in the WAP. The Permittees, however, appear to have relied upon this section to propose significant changes in other sections of the permit as well. Lastly, the NOD contains requests for information regarding numerous proposed modifications that appear to be completely unrelated to Section 311. Please submit a full response to the deficiencies identified in the attachment and a revised permit modification request to NMED within sixty (60) days of receipt of this NOD. To the extent that the Permittees rely on Congressional intent as part of their argument, please provide copies of any records relied upon. We understand that a full response to some of the comments listed in this NOD may require more than 60 days to develop. For this reason, NMED will consider a petition to extend the deadline for portions of the required information if you provide a written justification and expected submittal date for each portion. This petition must also be submitted within 60 days of receipt of the NOD.	As required by Sections 311(b)/310(b), the Permittees are proposing to change the method for demonstrating compliance with the environmental performance standards in the disposal rooms of the facility. By enacting Sections 311(b)/310(b), Congress mandated that room-based monitoring, instead of container-by-container headspace gas measurements, be the exclusive method used to ensure compliance with the WIPP disposal room performance standards required by 40 CFR §264.601(c). The PMR, as revised in response to NMED's comments, is structured to conform to these requirements and establishes a program that will allow the Permittees to more effectively and directly demonstrate that the environmental performance standards are being met. The proposed program will increase the amount of VOC monitoring performed in the WIPP underground. Moreover, the proposed approach to room-based VOC monitoring will provide for a more direct method of determining the emissions of VOCs from disposed containers. Because Sections 311(b)/310(b) state that the exclusive method for demonstrating compliance with the environmental performance standards shall be "by monitoring airborne volatile organic compounds in underground disposal rooms in which waste has been emplaced until panel closure," VOCs will no longer be measured on a container basis. Therefore, the PMR proposes to eliminate the current permit requirement that 100% of the waste containers be subject to headspace gas sampling and analysis for purposes of demonstrating compliance with the disposal room performance standards. The proposed program requires changes to the WAP, to Module IV, which includes conditions related to VOC monitoring, room-based limits, and tracking of headspace gas data, and Attachment N, which contains the VOC monitoring plan. The specific changes to the applicable permit sections are contained in the revised redline/strikeout version of the HWFP. The proposed changes to the VOC monitoring program, described in the revised PMR and in the Responses to Comments below, meet the requirements of the disposal room performance standards and Sections 311(b)/310(b). This Response to Comments addresses all of NMED's requests for additional information. The documents submitted in response to the December 30, 2004 NOD demonstrate that the proposed permit modifications in the PMR, as revised in response to NMED's comments, are related to the requirements of Sections 311/310 and also meet the requirements for a Class 3 permit modification, as stated in Response to Comment L.2, above. Copies of the Section 311 legislative history are being provided as part of the Response to Comments.
		Introduction
1.0, 1.1	The comments herein reflect the New Mexico Environment	In response to the December 30, 2004 Section 311 NOD and the March 29, 2005 second RH

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	Department's (**NMED's**) analysis of the *Waste Isolation Pilot Plant (WIPP) Class 3 Permit Modification Request* (for the Waste Analysis Plan and associated provisions), which was submitted by the U.S. Department of Energy (**DOE**) and Washington TRU Solutions LLC (collectively referred to as the **Permittees**). This analysis has led NMED to conclude that the changes proposed in this Permit Modification Request (**PMR**) would, if implemented, seriously undermine the foundation of the current permit and significantly distort the administrative record upon which the requirements of the permit are clearly based. The overview of the PMR states that it was submitted as required by Section 311 of the Energy and Water Development Appropriations Act for Fiscal Year 2004 Pub. L. 108-137 (**Section 311**), which states: *"(a) The Secretary of Energy is directed to file a permit modification to the Waste Analysis Plan (WAP) and associated provisions contained in the Hazardous Waste Facility Permit for the Waste Isolation Pilot Plant (WIPP). For purposes of determining compliance of the modifications to the WAP with the hazardous waste analysis requirements of the Solid Waste Disposal Act (42 U.S.C. 6901 et seq.), or other applicable laws waste confirmation for all waste received for storage and disposal shall be limited to: (1) confirmation that the waste contains no ignitable, corrosive, or reactive waste through the use of either radiography or visual examination of a statistically representative subpopulation of the waste; and (2) review of the Waste Stream Profile Form to verify that the waste contains no ignitable, corrosive, or reactive waste and that assigned Environmental Protection Agency hazardous waste numbers are allowed for storage and disposal by the WIPP Hazardous Waste Facility Permit.* *(b) Compliance with the disposal room performance standards of the WAP shall be*	NOD, the Permittees are submitting a revised PMR that proposes 1) changes to the method for ensuring compliance with the environmental performance standards, 2) changes to the HWFP Waste Analysis Plan (WAP) and 3) changes to container storage and management requirements needed to implement the proposed changes to the WAP. The revised PMR contains a summary of the primary changes proposed and justifications for the proposed changes. The revised Table of Changes identifies each of the proposed changes and provides a justification for each change. The redline/strikeout version of the Permit includes all of the proposed changes. The revised PMR is consistent with the requirements of Sections 311/310, is consistent with the current permit and with overall waste analysis requirements of the WAP in the current permit, is consistent with the administrative record, meets the waste analysis requirements of 40 CFR 264.13 and is protective of human health and the environment. The revised PMR meets the requirements for a Class 3 permit modification pursuant to 40 CFR §270.42(c). It is the Permittees' positions that neither Sections 311/310 nor the revised PMR change the requirement that TRU mixed waste must undergo waste analysis to meet the requirements of §264.13 before it is accepted for storage and disposal at WIPP. As in the current permit, AK is the primary method used to analyze the waste. (Permit Attachment B4). In response to NMED's comments, the revised PMR proposes two alternative pathways that the Permittees may follow for waste approval. Both pathways require the generator/storage sites to compile the AK information into an auditable record for the waste stream. The AK sufficiency determination pathway applies to those waste streams that the Permittees determine have sufficient AK information to satisfy the TSDF-WAC (e.g., to assign HWNs). For these waste streams, the Permittees may request an AK sufficiency determination from NMED. If NMED determines that the AK is sufficient, or when the Permittees do not submit an AK sufficiency determination request additional waste analysis (i.e., Headspace Gas Sampling and Analysis and Solids Sampling and Analysis) will be performed on a representative portion of the waste stream The changes to the WAP proposed in the revised PMR, which combine the use of AK, sampling and analysis on a representative portion of the waste stream or an AK sufficiency determination involving NMED, and Permittee level waste approval and acceptance processes, assure that the Permittees obtain the information needed to safely store and dispose of TRU mixed waste at WIPP. Neither "characterization" nor "confirmation" are defined by RCRA and, consistent with NMED's comments in the Section 311 NOD, the Permittees have not included proposed definitions of these terms in the Revised PMR. Instead, the revised PMR addresses requirements for waste analysis. As stated in the PMR, §264.13 sets forth the general requirements for waste analysis. The waste analysis requirements of §264.13 are implemented by a facility's written waste analysis plan, which "describes the procedures which [the facility] will carry out to

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	demonstrated exclusively by monitoring air borne volatile organic compounds in underground disposal rooms in which waste has been emplaced until panel closure." NMED recognizes that Section 311 directed the Permittees to submit a PMR regarding the waste analysis plan and associated provisions. NMED strongly disagrees, however, with the Permittees' conclusion that this language eliminates the current permit requirements to characterize wastes through sampling and analysis, a conclusion that is clearly contrary to the statutory and regulatory RCRA waste characterization requirements administered by NMED under its federal RCRA authorization. Accurate characterization of all wastes that are destined for WIPP is necessary to ensure that the waste will not adversely impact human health or the environment over the disposal facility's lifespan. The majority of NMED's requests for information and clarification relate to the Permittees' expansive interpretation of Section 311(a). The plain language of the statute does not provide any insight into how the undefined concept of "confirmation" relates to the well-established RCRA concept of waste characterization. The primary objective of the general waste analysis requirements, which are codified in 40 CFR §264.13 (20.4.1.500 NMAC), is to ensure that: "At a minimum, the analysis *must contain all of the information* which must be known to treat, store, or dispose of the waste in accordance with this part…" (emphasis added). The Permittees, however, begin the PMR by distorting the clear language and intent of 40 CFR §264.13 in the *Table of Changes* in the *Overview of the Permit Modification Request.* The PMR provides the following explanation for changing the meaning of the term "characterization" and defining the term "confirmation" in Module II.C.1: *"40 CFR §264.13 specifies the general requirements for waste analysis. This includes waste characterization (i.e., providing the information specified in 40 CFR §264.13(a)) and waste confirmation (i.e., completing the verification activities in 40 CFR §264.13(c))…**Characterization** means those*	comply with paragraph (a) of this section." §264.13(b). Therefore, the specific requirements which WIPP must meet to comply with §264.13 are found in the WIPP waste analysis plan (WAP). (Permit Module II.C.1; Permit Attachment B at B-1; *see also* NMED's Response to Written Public Comments Submitted on Revised Draft Permit, Module II, Comment FF.1-2; 45 Fed. Reg. at 33180). The HWFP and the administrative record identify radiography, VE, HSGSA, and SSA as methods for confirming AK characterization. As explained in the administrative record, the current WIPP HWFP "requires acceptable knowledge characterization of TRU mixed waste intended for WIPP, as *confirmed* by radiographic or visual examination, and headspace gas and solids sampling." (New Mexico Environment Department's Direct Testimony Regarding Regulatory Process and Imposed Conditions, HRM 98-04(P), at p. 5 of 9)(emphasis added). The Report of the Hearing Officer stated that "headspace gas analysis will be performed on all waste streams, and solids sampling and analysis for certain homogeneous solids, soils and gravel will be performed to *confirm* acceptable knowledge…Waste containers will be radiographed, and a statistically selected portion visually examined, to *confirm* the absence of prohibited items." (Report of the Hearing Officer, HRM 98-04(P) at 86, citing to testimony of E. Hunter)(emphasis added); (*see also Improving the Characterization Program for Contact-Handled Transuranic Waste Bound for the Waste Isolation Pilot Plant,* National Academy of Sciences, 2004, at 48; Exhibit 2, attached hereto, excerpts from the administrative record). Permit Attachment B4 of the current HWFP states that "[s]ampling and analysis shall be performed to *confirm* acceptable knowledge and to update and modify initial AK assessments. Sampling and analysis includes radiography, visual examination, headspace gas, and homogeneous solids sampling and analysis." (Permit Attachment B4 at B4-1)(emphasis added). The PMR, as revised in response to NMED's comments, proposes changes to the WAP that meet the regulatory requirements of 40 CFR §264.13 and are consistent with Sections 311/310. For purposes of compliance with §264.13, the revised PMR uses the term "waste analysis" as performed by either the generator/storage sites or by the Permittees. In part, waste analysis identified in Section 311 as "confirmation" would be performed by the Permittees. Because the plain language of Section 311 limits the waste analysis performed by the Permittees to the use of radiography or visual examination, the use of headspace gas sampling and analysis and homogeneous sampling and analysis as standard methods required after the AK record has been compiled must be eliminated. Both the plain language and the legislative history of §311 support this change to the Permit requirements. The Committee Report for the Committee on Appropriations states as follows: *Waste Analysis Requirements for the Waste Isolation Pilot Plant.*-The Committee recognizes that the WIPP facility is central to the cleanup of the nuclear weapons complex and that waste should be emplaced as quickly and safely as possible-for reasons of reducing clean-up costs, public safety, and with the growing threat of

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	activities performed by the generator/storage site to identify the physical and chemical properties of the waste. Characterization for purposes of this WAP is performed through the compilation of acceptable knowledge information. ***Confirmation*** *is performed using radiography or visual examination (VE) on a representative subpopulation of the waste to verify that the waste contains no ignitable, corrosive or reactive waste…"(emphasis in original)* The PMR's explanation, however, does not correspond to the language in 40 CFR §264.13. NMED also finds no reference to the specific term "confirmation" either in 40 CFR §264.13 or as a general term referenced anywhere in 40 CFR §264.	radiological terrorism, for national security. Current law and regulation regarding the sampling and analysis of waste destined for WIPP produces substantial health and safety risks to workers with little if any corresponding public benefit. Both the New Mexico Environmental Evaluation Group, an independent WIPP oversight group, and the National Academy of Sciences have strongly suggested that waste destined for disposal at WIPP should not undergo hazardous waste sampling and analysis. To this end, the Committee believes that eliminating dangerous and excessive *waste confirmation requirements* that offer little if any benefit to the health and safety of the public will serve the national interests inherent in the safe and expeditious cleanup of the nuclear weapons complex. For these reasons, the Committee has included language in Section 310 that requires that waste characterization be limited to determining that the waste is not ignitable, corrosive, or reactive. This *confirmation* will be performed using radiography or visual examination of a representative subpopulation of the waste." (Emphasis added). (Committee Report to Accompany S. 1424, July 17, 2003). As indicated by the legislative history, the intent of Congress was to limit waste confirmation, which the revised PMR refers to as Permittee waste analysis, to the use of radiography and VE to determine the waste is not ignitable, corrosive, or reactive. Congress has the authority to amend, clarify, or change federal regulatory requirements as they pertain to a federal facility, such as WIPP. Once Congress has passed the legislation, as it did in Sections 311/310, that legislation becomes part of the federal requirements for the facility. NMED, in administering the RCRA program, is required to implement changes in the RCRA regulatory requirements passed by Congress. Separate from the requirements of Section 311/310, however, the Permittees wish to again emphasize that the revised PMR meets the regulatory requirements of 40 CFR §264.13 and the requirements for a Class 3 permit modification pursuant to 40 CFR 270.42, and its provisions are fully protective of human health and the environment.-
1.1.a	The PMR also proposes changes that appear unrelated to Section 311(a). For example, the Permittees' propose to limit characterization performed by the generator/storage sites that send TRU waste to WIPP for disposal to "acceptable knowledge" (**AK**). This limitation is not authorized in Section 311. The PMR attempts to bolster its exclusive use of AK by misrepresenting the AK discussion in EPA's 1994 *Waste Analysis: EPA Guidance Manual for Facilities That Generate, Treat, Store and Dispose of Hazardous Waste*. While the PMR is correct in stating that: "Acceptable knowledge, as an alternative to testing, can be used to meet all or part of the waste characterization requirements under RCRA", this selective quote omits EPA's strongly stated	The revised PMR requires the generator/storage sites to comply with the WIPP waste analysis plan (WAP) before waste is accepted for storage or disposal at WIPP. The PMR does not eliminate the use of sampling and analysis by the generator/storage sites where necessary for purposes of waste analysis. See response to Comment 1.0 and the revised PMR for a discussion of the requirements for generator/storage site sampling and analysis.

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	preference in that same guidance manual for "conducting sampling and laboratory analysis because it is more accurate and defensible than other options."	
1.1.b	The Permittees then attempt to create a separate "confirmation" step that removes VE, radiography (**RTR**), headspace gas measurement, and solids sampling from the characterization process. The "confirmation" step, which will also be performed at the generator/storage sites, would be limited to using RTR and/or VE on a "statistically representative subpopulation of the waste" to verify that the waste matches the waste stream description as determined by AK. NMED is concerned that this truncated waste characterization approach will likely result in improperly characterized waste being disposed of at WIPP. The PMR does not explain how the enfeebled AK approach proposed in the revised Attachment B4, "TRU Mixed Waste Characterization Using Acceptable Knowledge", would identify wastes that exhibit a toxicity characteristic for metals, other than lead, or for volatile organic compounds (**VOCs**) without sampling and analysis.	As discussed in Response to Comment 1.0, above, the revised PMR sets forth waste analysis to be undertaken by the generator/storage sites and waste analysis to be performed by the Permittees, either at the WIPP facility or off-site. The revised PMR, as required by Sections 311(a)/310(a), limits Permittee waste analysis to the use of radiography or visual examination, and removes HSGSA and SSA as standard methods of waste analysis required after the AK record has been compiled by the generator/storage sites. Permit Attachment B-7 sets forth the requirements for Permittee level waste approval and acceptance processes. As in the current permit, the revised PMR will require the generator/storage sites to compile the AK information into an auditable record and to provide objective information demonstrating that the waste meets the requirements of the WIPP Treatment, Storage and Disposal Facility waste acceptance criteria (TSDF-WAC). Attachment B4 has been revised to reflect the current approach set forth in the revised PMR. See the revised PMR and Response to Comment 1.0 for a discussion of the proposed generator/storage site waste analysis requirements, including requirements for sampling and analysis. See the redline/strikeout version of the Permit for the proposed language.
1.1.c	The Permittees exaggerate the accuracy of AK in an attempt to justify the proposed elimination of the sampling and analysis from waste characterization. NMED has consistently raised concerns about the reliability of AK accuracy reports. In the June 19, 2002 *NOD for the Class 3 PMR for Centralized Waste Confirmation*, NMED noted that while sites may assemble AK documentation in good faith: *"… information observed to date (including the AK accuracy reports) indicates that acquisition of the additional AK sampling information has led to the reassessment of existing waste stream content and even the identification of new waste streams not initially identified by AK… NMED expects that AK accuracy could be significantly reduced in the future as wastes with less documented information are brought on-line, thus reinforcing the need for a full characterization program as currently mandated in the Permit."* NMED's November 7, 2003, comments on the report entitled	AK has and will continue to provide information which, when based on experience and conservatively applied, will assure compliant storage and disposal at WIPP. The Permittees acknowledge that there will also be waste streams for which AK is insufficient and sampling and analysis will be required. See the revised PMR and Response to Comment 1.0 for a discussion of the proposed generator/storage site waste analysis requirements, including requirements for sampling and analysis. See the redline/strikeout version of the Permit for the proposed language.

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	An Analysis of TRU Waste Characterization Accuracy by Bob Kehrman and Willie Most (September 3, 2003) further elaborate on this concern. For instance, these comments raised the issues of how "troublesome" containers are handled. NMED noted that these: *"… containers are often segregated for later disposition, and waste containers are re-assigned to streams that contain the HWNs [Hazardous Waste Numbers]. Actions may not result in removal from the TRU inventory because the waste is still TRU, but obviously actions have been taken to remedy the identification of HWNs via headspace gas sampling that had not been assigned by AK, such that these actions may not "show up" in AK accuracy calculations."*	
1.1.d	The Permittees have also proposed to eliminate any distinction between retrievably stored and newly generated wastes. Both NMED and EPA have consistently differentiated between retrievably stored wastes and to-be-generated wastes because of the inherent uncertainties associated with older, poorly documented waste streams that were generated fifteen to thirty years or more ago (Certification Decision Final Rule, 63 Fed. Reg. 27392, May 18, 1998).	The revised PMR restores the distinction between retrievably stored and newly generated TRU-mixed waste.
1.1.e	The Permittees have provided no documentation that all of the generator/storage sites have extensive process-based descriptions of historical waste generation activities. As NMED stated previously in the June 19, 2002 *NOD for the Class 3 PMR for Centralized Waste Confirmation*: *"To date, no two characterization systems (including AK) have been the same, and each site has demonstrated unique deficiencies that have differentially impacted its ability to adequately characterize wastes, even though all sites are supposed to be implementing exactly the same requirements set forth in the WAP."*	The Permittees acknowledge that variability exists in AK records between sites. This is to be expected given the nature of waste generating processes, site administration processes, and basic facility differences across the complex. The make-up of the AK record for individual waste streams varies. Indeed, not all generators have extensive process-based descriptions of historical waste generation activities. Waste generating processes, generator site administrative processes, and facilities vary. It is the responsibility of the generator site to complete a waste stream profile based on AK and, as necessary, additional waste analysis information to demonstrate that the necessary waste stream information is provided and that it meets the WIPP TSDF-WAC. Permit Attachment B4-2a requires that the generator sites must have the following information in the AK record for every waste stream: • Map of the site with the areas and facilities involved in TRU mixed waste generation, treatment, and storage identified • Facility mission description as related to TRU mixed waste generation and management (e.g., nuclear weapons research may involve metallurgy, radiochemistry, and nuclear physics operations that result in specific waste streams)

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		• Description of the operations that generate TRU mixed waste at the site (e.g., plutonium recovery, weapons design, or weapons fabrication) • Waste identification or categorization schemes used at the facility (e.g., item description codes, content codes) • Types and quantities of TRU mixed waste generated, including historical generation through future projections • Correlation of waste streams generated from the same building and process, as appropriate (e.g., sludge, combustibles, metals, and glass) • Waste certification procedures for retrievably stored and newly generated wastes to be sent to the WIPP facility • Area(s) and/or building(s) from which the waste stream was or is generated • Waste stream volume and time period of generation (e.g., 100 standard waste boxes of retrievable stored waste generated from June 1977 through December 1977) • Waste generating process described for each building (e.g., batch waste stream generated during decommissioning operations of glove boxes), including processes associated with U134 waste generation, if applicable. • Process flow diagrams (e.g., a diagram illustrating glove boxes from a specific building to a size reduction facility to a container storage area). In the case of research/development, analytical laboratory waste, or other similar processes where process flow diagrams cannot be created, a description of the waste generating processes, rather than a formal process flow diagram, may be included if this modification is justified and the justification is placed in the auditable record. The Permittees have included AK sufficiency criteria in the revised PMR as follows: 1. Mandatory AK information is available (Permit Attachment B4-2a and B4-2b); 2. A waste stream has been properly delineated and meets the HWFP definition of a waste stream in Permit Attachment B4-2b and B-1a; 3. The AK process described in the HWFP was followed (for example, AK personnel were appropriately trained); discrepancies in the AK record were documented and resolved (Permit Attachment B4-3a); 4. The generator/storage site has developed a written procedure for compiling the AK information and assigning hazardous waste numbers as required by Permit Attachment B4-

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		3b; 5. The generator/storage site has assessed the AK process (Permit Attachment B4-3b); 6. The generator/storage site has documented evidence that the waste meets the TSDF-WAC (Permit Attachment B4-2a).
1.1.f	The Permittees' commitment to compiling accurate AK for newly generated wastes is also questionable. Section B-3c, "Confirmation of TRU Mixed Waste", inexplicably deletes current permit requirements for thoroughly documenting waste generation processes. Nothing in Section 311 appears to justify these deletions.	In the revised PMR, Section B-3c has been restored as Section B-3d and has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the Permit for the proposed language. The revised, consolidated PMR meets the requirements for approval of a Class 3 PMR set forth in 40 CFR 270.42(c). Permits may be modified "to allow facilities to make technological improvements, comply with new environmental standards, respond to changing waste streams and generally improve waste management practices." 53 Fed.Reg. 37912, 37913 (Sept. 29, 1988). The revised PMR meets the waste analysis requirements set forth in 20.4.1.500 NMAC (incorporating 40 CFR §264.13) and provides the Permittees with the information needed to store and dispose of TRU mixed waste at the WIPP facility. The revised PMR improves the waste management practices by tailoring the required waste analysis to the information needed for the assignment of hazardous waste numbers and to meet the requirements of the TSDF-WAC. By reducing the requirements for sampling and analysis, the revised PMR also furthers the federally mandated goals for the disposal of TRU mixed waste and saves resources and decreases the potential for worker exposure to the radioactive and hazardous waste in the containers. The modifications proposed in the PMR meet the waste analysis requirements of §264.13, are consistent with the requirements of Sections 311/310, are consistent with the waste acceptance criteria in the Permit, and are protective of human health and the environment.
1.1.g	The Permittees' apparent lack of concern about the accuracy of AK is reinforced by the deletion of the current permit requirement for the compilation of AK into an auditable record. It is unclear why the Permittees would choose to delete a requirement to compile "records which allow the Permittees to conduct a systematic assessment, analysis, and evaluation of the Permittees' compliance with the WAP and this Permit."	The Permittees did delete some requirements for assembling AK in an auditable record in the January 2004 submittal associated with the approach proposed in the January 2004 PMR. However, specific references to the generator site placing required and supplemental information in an auditable record can be found in the January 2004 PMR at Sections: • B4-2 Acceptable Knowledge Documentation • B4-2b Required TRU Mixed Waste Stream Information • B4-2c Supplemental Acceptable Knowledge Information • B4-3 Acceptable Knowledge Training, Procedures and Other Requirements • B4-3b Acceptable Knowledge Assembly, Compilation, and Confirmation Procedures and Required Administrative Controls • B4-3c Criteria for Assembling an Acceptable Knowledge Record and Delineating the Waste Stream • B4-3f Audits of Acceptable Knowledge
1.1.h	The PMR does little to define procedures for determining if the AK is inaccurate. Admittedly, the PMR does state in	See response to comment 1.1.e. See response to Comment 1.0 and the revised PMR for a discussion of the requirements for generator/storage site sampling and analysis.

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	Section B4-2, "Acceptable Knowledge Documentation", that "supplemental information shall be obtained" when the required AK information is not available for a particular waste stream. Unfortunately, the list of potential sources of supplemental information provided in Section B4-2c, "Supplemental Acceptable Knowledge Information", does not include collecting any analytical data for chemical and physical verification.	
1.1.i	The Permittees have also failed to demonstrate how the "confirmation" process will ensure that the wastes being sent to WIPP are compliant with RCRA. The current WAP, which is compliant with 40 CFR §264.13, requires full characterization of all waste before it can be managed, stored, or disposed of at WIPP. The PMR proposes that the generator/storage site "confirm" the results of the AK by using RTR or VE on a representative subpopulation of the waste to verify that the waste contains no ignitable, corrosive or reactive waste. The Permittees would then review the Waste Stream Profile Form to verify that the waste contains no ignitable, corrosive, or reactive waste and that assigned EPA hazardous waste numbers are allowed for storage and disposal at WIPP. It is unclear how this approach would prevent an initial AK error from being perpetuated under the generator/storage site's confirmation step and the Permittees' paperwork examination.	The waste analysis process as defined in the revised PMR will demonstrate compliance with RCRA through the process for review of AK sufficiency criteria, followed by either an affirmative AK sufficiency determination by NMED or by the collection of additional waste analysis data.
1.2	NMED's request for information and clarification also relates to the Permittees' proposal to change the VOC monitoring program in the underground disposal areas in response to Section 311(b). The PMR seeks to eliminate many requirements in the Permit, including the collection of headspace gas data for all waste containers, the VOC room-based emission rate limits contained in Module IV of the Permit, and the WWIS reporting as part of the VOC monitoring plan. Additionally, the Permittees seek to eliminate the requirement to monitor VOC emissions from all active and closed Underground HWDUs, and instead limit monitoring to the open active disposal room and the closed room adjacent to the active room. These changes were not supported by a technical explanation for the change, but were instead justified by the Permittees' interpretation of the language of Section 311(b), which states:	The Permittees did not eliminate or change the current monitoring of VOCs at Station VOC-A and VOC-B, which monitor VOC emissions from all active and closed HWDUs. Permittees' responses to NMED's comments on VOC monitoring are below. In response to NMED's comments, the Permittees have revised the PMR to provide for monitoring of all rooms in an active panel. Module IV includes conditions related to VOC monitoring, room-based limits, and tracking of headspace gas data generated in accordance with the requirements of the current WAP. Because the PMR proposes to use room-based VOC monitoring in lieu of container-based monitoring, appropriate changes to Module IV are proposed. Changes are also proposed to Permit Attachment N to add room-based VOC monitoring to the existing confirmatory VOC monitoring program in the WIPP underground.

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	"Compliance with the disposal room performance standards of the WAP shall be demonstrated exclusively by monitoring airborne volatile organic compounds in underground disposal rooms in which waste has been disposed until panel closure." Section 311(b) appears to address the "disposal room performance standards of the WAP" (defined as Attachments B and B1 through B6 of the permit). The plain language of the statute does not provide any insight into why the Permittees propose modifying the VOC monitoring requirements in other parts of the permit, including Attachment N and Module IV, which describes the environmental performance standards for the repository and the details for VOC monitoring. NMED has provided specific comments for the Permittees' response.	
2.0	As stated in the introduction to this NOD, the accurate characterization of all wastes destined for WIPP is necessary to ensure that the waste will not adversely impact human health or the environment over the disposal facility's lifespan. The initial burden for making the determination if a waste is hazardous belongs to the generator. This burden is shared by any off-site disposal facility that accepts the generator's waste. The following is a brief outline of the RCRA and New Mexico Hazardous Waste Management regulations that apply to the TRU mixed wastes destined for disposal at WIPP: • ***40 CFR §262.11(a) - Is the waste excluded from regulation under 40 CFR §261.4?*** Persons that generate a solid waste must first determine if the waste is excluded from regulation as a hazardous waste under 40 CFR §261.4. If the generator determines that the waste is not excluded, he or she must conduct a hazardous waste determination in accordance with the process specified in 40 CFR §262.11.	This comment is part of NMED's brief outline of the RCRA and New Mexico Hazardous Waste Management regulations and does not require a specific response. The Permittees' proposed permit modifications are consistent with the provisions of 40 CFR §262.11 and New Mexico Hazardous Waste Management regulations.
2.0.a	• ***40 CFR §262.11(b) - Is the waste listed?*** Process knowledge is the primary means for determining whether a solid waste is a listed waste. Laboratory analysis alone cannot be used to make this determination. For example,	This comment is part of NMED's brief outline of the RCRA and New Mexico Hazardous Waste Management regulations and does not require a specific response. The Permittees' proposed permit modifications are consistent with the provisions of 40 CFR §262.11(b) and New Mexico Hazardous Waste Management regulations.

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	some of the TRU mixed wastes to be emplaced at WIPP that contain spent halogenated volatile organic solvents used to clean metal surfaces prior to plating, polishing, or fabrication are F-listed wastes (i.e., F001-F005).	
2.0.b	• ***40 CFR §262.11(c) - Is the waste characteristically hazardous?*** Generators may use analytical testing, AK, or a combination of the two to determine if a waste exhibits one or more of the four characteristics: ignitability, corrosivity, reactivity, and toxicity. Regardless of the methodology chosen by the generator, he or she is legally responsible for accurately characterizing the waste. Generator/storage sites that are sending TRU mixed wastes to WIPP for disposal must first determine if any of the wastes exhibit ignitability, corrosivity, or reactivity because these wastes are prohibited at the WIPP facility. Because the Permittees believed test methods could pose analytical difficulties with respect to the radiological content of the waste, alternative test methods, including the option of substituting TCLP with totals constituent waste analysis, was proposed by the Permittees in the original application and was accepted as part of the current Permit. In the case of liquid determination, the permit does not require that the Permittee perform the paint filter test to determine liquid content in wastes. In practice this is performed by examining container liquid contents using visual examination/RTR. If the residual liquid volume does not exceed 1% by volume in any container, the waste is considered to be "non liquid".	This comment is part of NMED's outline of the RCRA and New Mexico Hazardous Waste Management regulations. Nothing in the WIPP HWFP or the Permittees' proposed permit modifications is contrary to the provisions of 40 CFR §262.11(c).
2.0.c	o ***40 CFR §261.21 - Is the waste ignitable?*** 40 CFR §261.21 presents determination of the characteristics of ignitability for solid wastes, including liquid, non liquid, and ignitable compressed gas. Generators use knowledge, testing, or a combination of the two to determine if a waste is ignitable, and must ensure that waste exhibit none of the properties presented in §261.21(a)(1)-(4). A “typical” generator would first assess the physical nature of the waste for which the ignitability determination would be made. If the waste were a solid or semisolid waste, a paint filter test using Method 9095 would be performed to	This comment is part of NMED's brief outline of the RCRA and New Mexico Hazardous Waste Management regulations and does not require a specific response. The Permittees’ proposed Permit modifications are consistent with the provisions of 40 CFR §261.21 and New Mexico Hazardous Waste Management regulations.

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	determine if free liquids were present. If the waste was discovered to be or contain a liquid by this test, or if the waste was originally identified as being a liquid, then the EPA has codified two tests that may be performed to determine whether the waste is ignitable: the Penskey-Martens closed-cup tester (Method 1010) and the Setaflash closed-cup tester (Method 1020). If the waste is not a liquid, then typical sites must also determine that the waste does not exhibit properties presented in §261.21(a)(2)-(4). The types of wastes generated at DOE generator/storage sites that may exhibit the characteristic of ignitability are generally wastes from decontamination and decommissioning activities and sludges. In the case of WIPP, sites substitute the prescribed liquid testing with RTR and/or VE to determine the presence of liquids. If no free liquids are present, the sites certify that waste is not ignitable under §261.21(a)(1), although wastes must still not be ignitable under §261(a)(2)-(4).	
2.0.d	o ***40 CFR §261.22 - Is the waste corrosive?*** 40 CFR §261.22 presents determination of the characteristic of corrosivity. The EPA has codified two analytical methods for determining if a liquid waste is corrosive: testing the pH of aqueous wastes, and measuring the corrosion rate of carbon steel when exposed to a liquid waste (Method 1110). There is no test method presented in 40 CFR §261.22 for evaluating corrosive solids. Under the current Permit, sites use RTR and/or VE for determining the presence of liquids. If no free liquids are present, the sites certify that waste is not corrosive under §261.22(a)(1) and (2).	This comment is part of NMED's brief outline of the RCRA and New Mexico Hazardous Waste Management regulations and does not require a specific response. The Permittees' proposed permit modifications are consistent with the provisions of 40 CFR §261.22 and New Mexico Hazardous Waste Management regulations.
2.0.e	***40 CFR §262.23 - Is the waste reactive?*** 40 CFR §261.23 presents determination of the characteristic of reactivity. This section of the regulations presents no specific EPA approved test for determining if a waste is reactive. Under the current permit, sites are required to determine that wastes do not exhibit any of the properties presented in §261.23(a). This is typically accomplished by using a combination of residual liquid	This comment is part of NMED's brief outline of the RCRA and New Mexico Hazardous Waste Management regulations and does not require a specific response. The Permittees' proposed permit modifications are consistent with the provisions of 40 CFR §262.23 and New Mexico Hazardous Waste Management regulations.

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	determination using RTR and/or VE and acceptable knowledge to determine whether a waste is reactive, although the AK record can include testing information and data.	
2.0.f	o ***40 CFR §262.24 - Is the waste toxic?*** The toxicity characteristic is determined by running a specific extraction test (Method 1311) on a representative waste sample and analyzing the extract for one or more of the 40 constituents listed in Table 1-*Maximum Concentration of Contaminants for the Toxicity Characteristic.* The current permit allows the use of Totals analysis in lieu of TCLP analysis, as per equivalency demonstrations made as part of the original permit application. Typical generator sites may use process knowledge to eliminate the need for perform toxicity testing or to limit the number of constituents analyzed in the waste extract. The current WIPP permit provides for the use of acceptable knowledge for determining the Toxicity Characteristics of heterogeneous wastes and the use of knowledge and sampling and analysis of homogeneous wastes, along with headspace gas sampling and analysis of all waste forms, for the assignment of toxicity characteristic constituents.	This comment is part of NMED's brief outline of the RCRA and New Mexico Hazardous Waste Management regulations and does not require a specific response. The Permittees' proposed permit modifications are consistent with the provisions of 40 CFR §262.24 and New Mexico Hazardous Waste Management regulations.
2.0.g	• ***40 CFR §264.13(a) - What are the general waste analysis responsibilities of generators and disposal facilities?*** Before a facility treats, stores, or disposes of any hazardous wastes it must: "*…obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, the analysis must contain all of the information which must be known to treat, store or dispose of the waste in accordance with this Part and Part 268 of this chapter.*" EPA's 1994 Waste Analysis Guidance expands on this regulatory language as follows: "*wherever feasible, the preferred method to meet the waste analysis requirements is to conduct sampling and laboratory analysis because it is more accurate and defensible than other options*" (40 CFR §264.13(a)). This guidance also states that generators and TSDFs may use AK to meet all or part of the waste analysis requirements.	This comment is part of NMED's brief outline of the RCRA and New Mexico Hazardous Waste Management regulations and does not require a specific response. The Permittees' proposed permit modifications are consistent with the provisions of 40 CFR §264.13(a) and New Mexico Hazardous Waste Management regulations. The revised PMR proposes a waste analysis plan that will assure that the Permittees have the information required by §264.13(a).

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2.0.h	• ***Acceptable knowledge.*** EPA's 1994 Waste Analysis Guidance manual broadly defines the term "acceptable knowledge" to include process knowledge, waste analysis data from generators of similar wastes, and facility records of analysis performed before the effective date of RCRA. The WIPP permit identifies sources of AK to include the following required waste stream information elements: areas and buildings from which the waste stream was generated, waste stream volume and period of generation, waste generating process descriptions, process flow diagrams, and material inputs or other information that identify the chemical and radionuclide content of the waste stream. The WIPP permit also identifies other supplemental or supporting sources of AK. EPA's 1994 Waste Analysis Guidance lists the following examples of situations where it may be appropriate to apply acceptable knowledge: to identify hazardous constituents in wastes from well documented specific processes (e.g., F and K-listed wastes), to characterize wastes that are discarded unused commercial chemical products, to characterize wastes when sampling and analysis may be limited by health and safety risks to personnel, or to characterize wastes when the physical nature of the waste does not lend itself to taking a laboratory sample. A generator must have sufficient information to make an accurate characterization because if later testing by a regulatory agency or a disposal facility demonstrates that the generator's characterization was incorrect the generator could potentially be subject to enforcement action. There is no "good faith" mistake provision in 40 CFR §264.13. For this reason it is important to understand that, whatever sampling and analysis is performed by a generator, storage, or disposal facility, they will be liable in an enforcement proceeding if the sampling and analysis performed by an enforcement agency indicates the presence of wastes not accurately characterized by the Permittee. This difference is explained in EPA's	The revised PMR provides a method to assure that the TRU mixed waste is subject to the required waste analysis prior to acceptance for disposal at WIPP. Neither the revised PMR nor Sections 311/310 limit the generator/storage sites ability to use sampling and analysis to obtain waste analysis information. The waste analysis tools identified by NMED would still be available to the generator/storage sites.. The generator/storage sites will be required to compile the AK information into an auditable record and to provide objective information demonstrating that the waste meets the requirements of the WIPP Treatment, Storage and Disposal Facility waste acceptance criteria (TSDF-WAC). In response to NMED's comments, the revised PMR proposes two alternative pathways that the Permittees may follow for waste approval. Both pathways require the generator/storage sites to compile the AK information into an auditable record for the waste stream. The AK sufficiency determination pathway applies to those waste streams that the Permittees determine have sufficient AK information to satisfy the TSDF-WAC (e.g., to assign HWNs). For these waste streams, the Permittees may request an AK sufficiency determination from NMED. If NMED determines that the AK is sufficient, or when the Permittees do not submit an AK sufficiency determination request additional waste analysis (i.e., Headspace Gas Sampling and Analysis and Solids Sampling and Analysis) will be performed on a representative portion of the waste stream The Permittees will perform waste verification and examination activities prior to final acceptance of the waste for storage or disposal, as set forth in the proposed Permit Attachment B-7. The procedures proposed in the revised PMR are consistent with the use of AK pursuant to 40 CFR 264.13 and with the EPA April 1994 Waste Analysis Guidance, the Joint NRC/EPA Guidance on Testing Requirements for Mixed Radioactive and Hazardous Waste (62 FR 62079, 62085; November 20, 1997); DOE's Final Rule regarding radioactive waste and byproduct material promulgated at 10 CFR § 962 (52 FR 15937; May 1, 1987), and DOE's Occupational Radiation Protection Standards promulgated at 10 CFR Part 835 (58 FR 65458; December 14, 1993). The Joint NRC/EPA guidance, as well as DOE's final rules, recognize the importance of limiting unnecessary testing and analysis when undertaking waste analysis activities for mixed waste and recognize that the concept of the "as low as reasonably achievable (ALARA)" process should be applied to limit occupational radiation exposure. Reliance on AK, where it is supported by sufficient information, meets RCRA's general waste analysis requirements at 40 CFR § 264.13(a).

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	RCRA Waste Sampling Draft Technical Guidance: Planning, Implementation and Assessment (August 2002). A waste handler may need to "prove the negative"; that is, to demonstrate that a constituent concentration will not be exceeded or a characteristic will not be exhibited. EPA has addressed the need for sound sampling designs and proper quality control for waste handlers that are trying to "prove the negative": > *"The sampling strategy for these situations (proving the negative) should be thorough enough to insure that one does not conclude a waste is non-hazardous when, in fact, it is hazardous. For example, one needs to take enough samples so that one does not miss areas of high concentration in an otherwise clean material."* (55 Fed. Reg. 4440, *Hazardous Waste Management System: Testing and Monitoring Activities,* February 8, 1990) Conversely, an enforcement official that is conducting a compliance inspection needs to find one exceedance. That is, the agency only needs to "prove the positive". EPA's 1994 Waste Analysis Guidance also stresses that AK is "*not* an appropriate substitute for fingerprint or spot check procedures" (emphasis in the original) performed by the disposal facility unless the disposal facility is accepting manifested wastes from a site owned by the same company. Generator/storage sites that plan to send TRU mixed wastes to WIPP currently use a number of other characterization tools to reach a full understanding of their wastes. These facilities use headspace gas sampling to identify if VOCs are present that were not identified in the compilation of the AK record. The headspace gas sampling data is also provided to WIPP to assist the facility in effectively managing the emplacement of wastes. RTR of closed containers is used to determine the	

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	physical contents of the containers, such as residual liquids, and verify the waste form. VE of open containers is used to identify the physical contents of containers and to verify RTR results. Solids sampling is used statistically to determine concentrations of hazardous waste constituents and toxicity characteristic contaminants for homogeneous wastes. o ***Process knowledge.*** Process knowledge refers to knowledge of a waste's characteristics that was derived from information on the materials or processes that were used to generate the waste or from detailed information on wastes generated from similar processes. Sources of process knowledge include, but are not limited to, material balances, engineering production data, and material data sheets.	
2.0.i	• ***40 CFR §264.13(b) and (c) - What are the requirements for a disposal facility's waste analysis plan?*** Under 40 CFR §264.13(b) a permitted disposal facility must develop and follow a written waste analysis plan, which describes the procedures that will be employed at the facility to comply with 40 CFR §264.13(a). That is, the waste analysis plan must define how all wastes will be fully characterized prior to disposal. Typical private sector treatment, storage and disposal facilities visually inspect every bulk shipment and container to determine if the color, physical state, texture and odor are consistent with the waste description on the manifest. In addition, the TSDF will analyze samples from a representative number of containers for "fingerprint" parameters in accordance with 40 CFR §264.13(c) to evaluate the consistency between the waste on the dock and the manifest. With regards to WIPP, the NMED Secretary has specifically determined that sound waste analysis plan characterization procedures, which require full characterization prior to receipt, are necessary to protect human health and the environment:	This comment is part of NMED's brief outline of the RCRA and New Mexico Hazardous Waste Management regulations and does not require a specific response. The revised PMR, including the new Permit Attachment B-7, meets the waste analysis requirements of §264.13 and is consistent with Sections 311/310. Pursuant to the revised PMR, the Permittees will use a combination of waste screening and verification, waste analysis, and audits to review generator/storage sites' waste analysis activities.

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	" The disposal of significant quantities of waste that has not been characterized in accordance with the WAP poses a direct threat to human health and the environment. Indeed, waste characterization is 'the linchpin' of the HWA and RCRA. RP No.130 (Non-Mixed Waste, pgs 4-5); Tr. 2426-28 (S. Zappe)." HRM 98-04(P), Finding No. 262, Rec. Dec. dated Sept. 9, 1999 as adopted by Final Order of the Secretary dated Oct. 27, 1999. Unlike a typical private sector disposal facility, WIPP does not perform fingerprinting or other on-site characterization activities to verify that the waste chemically and physically matches the generator's characterization. Under the current permit the Permittees perform audits at the generator/storage sites rather than performing any on-site characterization at WIPP, which is consistent with the Permittees' "Start Clean-Stay Clean" operating philosophy. Obviously this unique approach to satisfying the Permittees' inspection/analysis requirements under 40 CFR §264.13(c) places additional importance on the veracity of the characterization performed by the generator/storage sites.	
2.0.j	• ***Waste characterization under 40 CFR §194.24.*** The complexity of the waste characterization process with regard to the WIPP repository is echoed in the preamble to the May 18, 1998 Certification Decision final rule (63 Fed. Reg. 27389-27393). . Under this regulatory program, the waste characterization process includes: "… *the collection and use of acceptable knowledge; destructive and/or non-destructive techniques for identifying and measuring waste components; and the validation, control, and transmittal to the WIPP Waste Information System Database of waste characterization data in accordance with 40 CFR §194.24(c)(4*)." The AK provides "essential waste content information" that later determines waste stream categories. The AK process then is subject to quality assurance (**QA**) checks. The QA check is followed by measurement techniques to verify the AK data and further define the content of the waste. Waste characterization for retrievably stored wastes	The U. S. Environmental Protection Agency (EPA) regulates the radioactive constituents of TRU waste to be disposed of at WIPP. EPA's waste analysis requirements under 40 CFR §194.24 are designed to assure that waste is properly analyzed to protect human health and the environment as related to the radioactive constituents in the waste. The Permittees agree with the NMED that, under EPA's regulatory program, the waste analysis process includes "the collection and use of acceptable knowledge . . ." as well as other elements important to the analysis of the radioactive components of the waste. In EPA's Final Certification decision, although EPA references some requirements of the WIPP HWFP, such as headspace gas sampling and analysis, EPA has not imposed such requirements on the generator sites shipping waste to WIPP nor has it imposed such requirements on the WIPP facility. The Permittees have proposed a revised PMR to implement the requirement of Sections 311/310 to eliminate certain testing requirements in the Waste Analysis Plan of the WIPP HWFP. The testing requirements to be eliminated from the WAP of the WIPP HWFP, which include the elimination of the use of HSGSA for purposes of demonstrating compliance with the environmental performance standards of 40 CFR §264.601(c) and the elimination of HSGSA and SSA as Permittees' methods to verify the AK record, are not requirements of the EPA waste analysis provisions contained in the 40 CFR §194.24.

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	begins with using AK to separate the waste containers into waste streams. All retrievably stored containers are then examined using RTR or VE to verify the waste form, the absence of prohibited items, and to determine the additional waste characterization techniques necessary to complete the characterization. If RTR is used, a statistically selected number of waste containers will be selected for VE to verify the RTR results. The representativeness of containers selected for VE will be validated by reviewing documents that show that true random samples were collected. If the VE verification conflicts with the results of the RTR, the drum and possibly the entire container is reclassified and a higher percentage of future containers will be required to undergo VE. All retrievably stored waste containers also undergo headspace gas sampling and analysis for VOC concentrations and NDA for radioisotopes and their activities. The waste characterization process for to-be-generated wastes begins with verification that processes generating the waste have operated within established written procedures. First, waste containers are classified into waste streams using AK. VE is used during the packaging of the waste into drums to verify that the physical form of the waste matches the initial AK characterization. RTR is not used because the waste is visually examined during packing. *All to-be-generated waste containers also undergo headspace gas sampling and analysis for VOC concentrations* and NDA for radioisotopes and their activities. Each DOE generator/storage site that intends to ship waste to WIPP is required to develop and submit to EPA a written waste characterization program. The Department must also send documents that: "*explain the site's system of controls for waste characterization*, ***including the use of acceptable knowledge***…" (emphasis added).	
2.0.k	• EPA then conducts a baseline inspection of the waste characterization program at the site to verify that an adequate system of controls is in place and properly	The U. S. Environmental Protection Agency (EPA) regulates the radioactive constituents of TRU waste to be disposed of at WIPP. EPA's waste characterization requirements under 40 CFR §194.24 are designed to assure that waste is properly characterized to protect human health

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	Waste characterization under 40 CFR §194.24. The complexity of the waste characterization process with regard to the WIPP repository is echoed in the preamble to the May 18, 1998 Certification Decision final rule (63 Fed. Reg. 27389-27393). . Under this regulatory program, the waste characterization process includes: "… *the collection and use of acceptable knowledge; destructive and/or non-destructive techniques for identifying and measuring waste components; and the validation, control, and transmittal to the WIPP Waste Information System Database of waste characterization data in accordance with 40 CFR §194.24(c)(4*)." The AK provides "essential waste content information" that later determines waste stream categories. The AK process then is subject to quality assurance (**QA**) checks. The QA check is followed by measurement techniques to verify the AK data and further define the content of the waste. Waste characterization for retrievably stored wastes begins with using AK to separate the waste containers into waste streams. All retrievably stored containers are then examined using RTR or VE to verify the waste form, the absence of prohibited items, and to determine the additional waste characterization techniques necessary to complete the characterization. If RTR is used, a statistically selected number of waste containers will be selected for VE to verify the RTR results. The representativeness of containers selected for VE will be validated by reviewing documents that show that true random samples were collected. If the VE verification conflicts with the results of the RTR, the drum and possibly the entire container is reclassified and a higher percentage of future containers will be required to undergo VE. All retrievably stored waste containers also undergo headspace gas sampling and analysis for VOC concentrations and NDA for radioisotopes and their activities. The waste characterization process for to-be-generated wastes begins with verification that processes generating the waste have operated within established written procedures. First, waste containers are classified into	and the environment as related to the radioactive constituents in the waste. The Permittees agree with the NMED that, under EPA's regulatory program, the waste analysis process includes "the collection and use of acceptable knowledge . . ." as well as other elements important to the analysis of the radioactive components of the waste. In EPA's Final Certification decision, although EPA references some requirements of the WIPP HWFP, such as headspace gas sampling and analysis, EPA has not imposed such requirements on the generator sites shipping waste to WIPP nor has it imposed such requirements on the WIPP facility. The Permittees agree with the NMED that the waste analysis requirements under 40 CFR §194 are comprehensive. However, the Permittees disagree that the EPA's waste analysis requirements "contain many parallels to the current RCRA permit." Rather, EPA's waste analysis requirements under 40 CFR §194.24 are designed to assure proper identification and management of the radioactive constituents in TRU waste, while the purpose of waste analysis requirements in the WIPP HWFP is to ensure that the Permittees have all of the information needed to manage, store and dispose of the hazardous constituents of the waste, as required by 40 CFR §264.13. These two programs overlap in some respects but the parallels are few. The Permittees acknowledge that the potential for error exists even under a very comprehensive waste analysis program. However, when waste is analyzed - by testing, acceptable knowledge (without testing), or acceptable knowledge (with testing) – and highly conservative waste management practices are implemented, the likelihood of harm to human health or the environment is minimal. With regard to the DOE approval error involving the Hanford TRU debris waste at the PFP, use of acceptable knowledge (without testing) or physical testing of the waste, were irrelevant to causing or preventing this error. Reduced sampling and analysis for purposes of the Permittees' waste analysis, as mandated by Sections 311/310, would in no way open the door to serious disposal mistakes. The waste analysis program would continue to be comprehensive and robust, and fully designed to be protective of human health and the environment.

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	waste streams using AK. VE is used during the packaging of the waste into drums to verify that the physical form of the waste matches the initial AK characterization. RTR is not used because the waste is visually examined during packing. *All to-be-generated waste containers also undergo headspace gas sampling and analysis for VOC concentrations* and NDA for radioisotopes and their activities. Each DOE generator/storage site that intends to ship waste to WIPP is required to develop and submit to EPA a written waste characterization program. The Department must also send documents that: "*explain the site's system of controls for waste characterization,* ***including the use of acceptable knowledge***…" (emphasis added). EPA then conducts a baseline inspection of the waste characterization program at the site to verify that an adequate system of controls is in place and properly implemented. This inspection includes a demonstration by DOE regarding the collection and appropriate use of AK. If EPA determines that the site's waste characterization program is acceptable, it will publish a notice in the Federal Register and solicit public comment. After the public comment is reviewed, EPA's final written compliance decision is conveyed to DOE. Lastly, EPA will conduct an inspection to confirm the site's continued compliance. If EPA determines that the system of controls used at the site is not adequate to characterize certain waste streams, the site may not dispose of materials form those waste streams at WIPP until EPA's findings have been adequately resolved. Interestingly, in the summary to the waste characterization discussion EPA states: "*The waste characterization process, if implemented accordingly, provides complete and thorough characterization of the waste.* ***The DOE has committed to implement this process***" (emphasis added). NMED finds no plausible justification for the Permittees' attempt to exenterate the integrity of the RCRA waste analysis plan, which includes many of the same elements that are contained in	

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	the 40 CFR §194.24. As outlined above, the waste characterization requirements under 40 CFR §194 are comprehensive and contain many parallels to the current RCRA permit. DOE's recent mistaken certification of Plutonium Finishing Plant (**PFP**) waste from the Hanford site and the subsequent emplacement of the waste at WIPP demonstrate the potential for error even under a very comprehensive waste characterization program. As described in the November 30, 2004 Federal Register Notice (69 Fed. Reg. 69569-69572) EPA had approved Hanford's TRU debris waste from PFP that had been characterized using the approved systems and processes addressed in EPA's June 2003 Inspection Report. In the August 7, 2003 approval letter to the Carlsbad Field Office, EPA specifically stated: *"EPA has not approved acceptable knowledge for TRU solids, specifically ash and mixed oxides characterized at the PFP facility."* DOE's certification letter to Hanford did not include EPA's disposal prohibition. As a result 600 drums of waste were improperly emplaced at WIPP. Fortunately in this circumstance the generator did not rely on AK for physical and radiological characterization; the site relied on spectroscopic systems to establish isotopic ratios and EPA does not believe that these wastes constitute a threat to human health, the environment or the long-term performance of WIPP. NMED is concerned that if an error like this can happen under a comprehensive waste characterization program, the Permittees' proposed elimination of the current permit requirements to characterize wastes through sampling and analysis would open the door to more serious disposal mistakes.	
Technical Comments		
3.0	A cursory comparison between the waste characterization outline provided above and the Class 3 modifications proposed by the Permittees clearly demonstrate that the PMR would fundamentally change the foundation upon which the current permit is based. The following technical comments address NMED's concerns regarding the PMR's compliance	No response required.

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	with RCRA and the New Mexico Hazardous Waste Act. These comments are presented by general topic in the general order in which the topics appear in the PMR.	
3.1	The Table of Changes provides the following definitions for the terms "characterization" and "confirmation": *"40 CFR §264.13 specifies the general requirements for waste analysis. This includes waste characterization (i.e., providing the information specified in 40 CFR §264.13(a)) and waste confirmation (i.e., completing the verification activities in 40 CFR §264.13(c). Since Section 311(a) …addresses confirmation activities, it is important to use these two terms precisely in the WAP. The following convention is adopted for the WAP.* ***Characterization*** *means those activities performed by the generator/storage site to identify the physical and chemical properties of the waste.* ***Characterization*** *for purposes of this WAP is performed through the compilation of acceptable knowledge.* ***Confirmation*** *is performed using radiography or visual examination (VE) on a representative subpopulation of the Waste Stream Profile Form (WSPF) to verify that the waste contains no ignitable, corrosive, or reactive waste and assigned Environmental Protection Agency (EPA) hazardous waste numbers are allowed for storage and disposal by the WIPP Hazardous Waste Facility Permit (HWFP).* ***Waste analysis*** *is used when referring to the requirements of 40 CFR §264.13 generally.…"(emphasis in original).* NMED agrees with the Permittees' statement in the Table of Changes that: "…it is important to use these two terms (characterization and confirmation) precisely in the WAP." NMED strongly disagrees, however, with the Permittees' anfractuous interpretations of 40 CFR §264.13 and Section 311 that fundamentally change the current waste analysis plan. The Permittees' definitions of "characterization" and "confirmation" are not consistent with 40 CFR §264.13.	The PMR, as revised in response to NMED's comments, meets the requirements of 40 CFR §264.13 and assures that the Permittees will have all of the information necessary to store and dispose of the waste at WIPP. The changes to the WAP proposed in the revised PMR, which combine the use of AK, sampling and analysis on a representative portion of the waste stream or an AK sufficiency determination involving NMED, and Permittee level waste acceptance and approval processes, assure that the Permittees will obtain the information needed to safely store and dispose of TRU mixed waste at WIPP. Neither "characterization" nor "confirmation" are defined by RCRA and, consistent with NMED's comments in the Section 311 NOD, the Permittees have not included proposed definitions of these terms in the revised PMR. Instead, the revised PMR addresses requirements for waste analysis. The Permittees agree that neither "characterization" nor "confirmation" are defined by RCRA and, consistent with NMED's comments in the Section 311 NOD, the Permittees have not included proposed definitions of these terms in the revised PMR. Instead, the revised PMR addresses requirements for waste analysis. The revised PMR establishes the waste analysis requirements for the generator/storage sites and the waste analysis processes that will be followed by the Permittees. The proposed changes to the Permittees waste analysis activities currently in the HWFP also require changes to the generator/storage sites' waste analysis requirements in the permit in order to distinguish between waste analysis activities undertaken by the generator/storage sites and waste analysis activities undertaken by the Permittees. The revised PMR identifies the proposed changes to the HWFP and includes the justification for the proposed changes.

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	The intent of the general waste analysis requirements in 20.4.1.500 NMAC (incorporating 40 CFR §264.13(a)(1)), is unambiguous: *"Before an owner or operator treats, stores, or disposes of any hazardous wastes…he must obtain a detailed chemical and physical analysis of a representative sample of the wastes.* ***At a minimum, the analysis must contain all of the information which must be known to treat, store, or dispose of the waste in accordance with this part****…" (emphasis added).* Nothing in this section of the regulations limits the scope of this characterization process to the compilation of acceptable knowledge. NMED finds no language in Section 311(a) related to either characterization or acceptable knowledge. Subsection (a) of §264.13 describes the general requirements for waste characterization. Subsection (a)(1) includes the fundamental requirement that the owner "obtain a detailed chemical and physical analysis of a representative sample of the wastes." Subsection (a)(2) states that the analysis may include both physical sampling tests and existing data on the wastes. Subsection (a)(3) states that the analysis must be repeated as necessary to ensure that it is accurate and up to date. Subsection (a)(4) states the owner or operator of an off-site facility must inspect and, if necessary, analyze each shipment received at the facility to determine whether it matches the identity of the waste specified on the manifest.	
3.1.a	Subsection (b) specifies the minimum requirements in a waste analysis plan. It applies the requirements of subsections (a)(1)-(4). Thus, subsection (b) requires that waste analysis plans specify the parameters for which each waste will be analyzed, the test methods which will be used to test for the parameters, the sampling method which will be used to obtain a representative sample of the waste to be analyzed, and the frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date.	The waste analysis requirements of 40 CFR §264.13 are implemented by a facility's waste analysis plan, which "describes the procedures which [the facility] will carry out to comply with paragraph (a) of this section." The specific requirements which WIPP must meet to comply with 40 CFR §264.13 are found in the WIPP waste analysis plan (WAP). The WAP, as set forth in the revised PMR, describes the processes for generator/storage site waste analysis and for Permittee level TRU waste approval and acceptance. The revised PMR meets the requirements of 40 CFR §264.13(b).

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3.1.b	The Permittees' attempt in this PMR to define "confirmation" as a separate waste analysis activity is flawed in a manner similar to the previous attempt to do so in the Class 3 PMR for Centralized Waste Confirmation, which was submitted to NMED on June 5, 2001. As NMED stated in the June 19, 2002 Notice of Deficiency (NOD): *"…[I]t is NMED's interpretation and belief that all of the activities used to assess waste as presented in the Permit constitute characterization, and that separation of activities does not accurately reflect the requirements of the regulations, the intent of the original application as submitted by the Permittees, or the intent of the Permit as issued by NMED.* *Attachments to the Permit clearly indicate that acceptable knowledge (AK), headspace gas (HSG), solid sampling (SS), visual examination (VE), and radiography (RTR) are all considered waste characterization elements."* NMED's use of the word "confirmation" in the current permit is consistent with the common dictionary definition: the act of assuring the certainty or validity of something, or verification. That is, AK, VE, RTR, headspace gas sampling and solids sampling are tools that are integral to the generator's characterization process. These activities are not, as the Permittees attempt to establish, equivalent to "fingerprinting".	Neither "characterization" nor "confirmation" are defined by RCRA and, consistent with NMED's comments in the Section 311 NOD, the Permittees have not included proposed definitions of these terms in the Revised PMR. Instead, the revised PMR addresses requirements for waste analysis. As set forth in Permit Attachment B7, the Permittees will perform waste screening and verification of the TRU mixed waste and will perform either radiography or visual examination on a representative subpopulation of each waste stream in each waste shipment. The revised, consolidated PMR meets the requirements for approval of a Class 3 PMR set forth in 40 CFR 270.42(c). Permits may be modified "to allow facilities to make technological improvements, comply with new environmental standards, respond to changing waste streams and generally improve waste management practices." 53 Fed.Reg. 37912, 37913 (Sept. 29, 1988). The revised PMR meets the waste analysis requirements set forth in 20.4.1.500 NMAC (incorporating 40 CFR §264.13) and provides the Permittees with the information needed to store and dispose of TRU mixed waste at the WIPP facility. The revised PMR improves the waste management practices by tailoring the required waste analysis to the information needed for the assignment of hazardous waste numbers and to meet the requirements of the TSDF-WAC. By reducing the requirements for sampling and analysis, the revised PMR also furthers the federally mandated goals for the disposal of TRU mixed waste and saves resources and decreases the potential for worker exposure to the radioactive and hazardous waste in the containers. The modifications proposed in the PMR meet the waste analysis requirements of §264.13, are consistent with the requirements of Sections 311/310, are consistent with the waste acceptance criteria in the Permit, and are protective of human health and the environment.
3.1.c	The Permittees point to §264.13(c) as the source of authority for the definition of "confirmation" The wording of 40 CFR §264.13 (c), however, applies only to the verification activities *conducted at an off-site disposal facility* to ensure that the waste received at the disposal facility matches the waste designated on the hazardous waste manifest. It does not refer to the limited measures the Permittees propose to be performed at the generator/storage sites to verify the accuracy of the sites' acceptable knowledge: *"For off-site facilities, the waste analysis plan required in paragraph (b) of this section must also specify the procedures which will be used to*	See Response to Comment 1.0 and Comments 3.1 through 3.1.b.

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	inspect and, if necessary, analyze each movement of hazardous waste received at the facility ***to ensure that it matches the identity of the waste designated on the accompanying manifest*** *or shipping paper" (emphasis added).* Again, nothing in this section of the code mentions anything about "confirmation," and the section does not describe the activities, which the Permittees propose to define as "confirmation".	
3.1.1	Since there does not appear to be any other definition of the term "confirmation" in any part of the RCRA regulations, EPA guidance, Section 311, the RCRA statute, or the WIPP RCRA permit, the Permittees must identify the source of authority for their reliance on the terms "characterization" and "confirmation" in the manner used in the PMR: **Module II, *Section II.C.1 Waste Analysis Plan*, pages II-2 and II-3.** The changes in this subsection regarding the scope of waste characterization under 40 CFR §264.13 do not appear to be related to Section 311. The Permittees must identify the source of authority for these changes or delete the proposed revisions.	See Response to Comment 1.0 and Comments 3.1 through 3.1.b. The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. The revised, consolidated PMR meets the requirements for approval of a Class 3 PMR set forth in 40 CFR §270.42(c). Permits may be modified "to allow facilities to make technological improvements, comply with new environmental standards, respond to changing waste streams and generally improve waste management practices." 53 Fed.Reg. 37912, 37913 (Sept. 29, 1988). The revised PMR meets the waste analysis requirements set forth in 20.4.1.500 NMAC (incorporating 40 CFR §264.13) and provides the Permittees with the information needed to store and dispose of TRU mixed waste at the WIPP facility. The revised PMR improves the waste management practices by tailoring the required waste analysis to the information needed for the assignment of hazardous waste numbers and to meet the requirements of the TSDF-WAC. By reducing the requirements for sampling and analysis, the revised PMR also furthers the federally mandated goals for the disposal of TRU mixed waste and saves resources and decreases the potential for worker exposure to the radioactive and hazardous waste in the containers. The modifications proposed in the PMR meet the waste analysis requirements of §264.13, are consistent with the requirements of Sections 311/310, are consistent with the waste acceptance criteria in the Permit, and are protective of human health and the environment.
3.1.2	**Module II, *Section II.C.3 Treatment, Storage and Disposal Facility Waste Acceptance Criteria*, page II-6, 7th and 8th ¶.** See 3.3.1 above.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language.

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		See Response to Comment 3.1.1 (second and third paragraphs).
3.1.3	**Attachment B, *Introduction and Attachment Highlights*, page B-1, 1st ¶.** See 3.1.1 above.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.1.4	**Attachment B, *Introduction and Attachment Highlights*, pages B-4 through B-5, including Footnote 1.** See 3.1.1 above. In addition, Permittees must identify the source of authority for proposing to delete the current permit requirement that AK must be compiled into an auditable record.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. Footnote 1 has been reinstated. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs). .
3.1.5	**Attachment B, *Section B-1a Waste Stream Identification*, pages B-5 and B-6**. See 3.1.1 above.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.1.6	**Attachment B, *Section B-1b Waste Summary Category Groups and Hazardous Waste Accepted at the WIPP Facility*, page B-6, 2nd ¶.** See 3.1.1 above.	The Permittees have deleted the changes to Section B-1b. The only change to this section is to substitute the term "waste numbers" for "waste codes" in order to be consistent with RCRA, which refers to "waste numbers" rather than "waste codes."
3.2	Section 2.0 above summarizes the basic RCRA waste characterization requirements for all hazardous waste generators under 40 CFR §262.11 and 40 CFR §264.13(a). The generator/storage sites that ship wastes to WIPP are subject to site-specific permit requirements that are enforced by the state where the site is located and/or by EPA. Although this permit cannot directly regulate a generator/storage site in another state, it establishes waste characterization and other requirements that must be met before WIPP may receive TRU mixed wastes from a site. Most TRU wastes proposed for disposal at WIPP consist of items that became contaminated as a result of activities associated with the production of nuclear weapons or the cleanup of nuclear weapon production facilities. The TRU wastes that are contaminated with RCRA regulated hazardous wastes are the wastes that are regulated by NMED under this permit.	The Permittees agree that the Permit establishes waste analysis requirements that must be met by the generator/storage sites before TRU mixed waste can be accepted for storage or disposal at WIPP. The Permittees also agree that the hazardous components of the TRU mixed waste are subject to regulation by NMED under RCRA. The PMR does not propose a waste analysis program that relies exclusively on AK. Instead, the PMR, as revised in response to NMED's comments, proposes a waste analysis program that meets the requirements of 40 CFR §264.13 and Sections 311/310. The proposed changes to the WAP will ensure that the necessary waste analysis information is obtained before TRU mixed waste is accepted for storage and disposal. To the extent that generator/storage sites such as Oak Ridge plan to rely extensively on sampling and analysis, the PMR will not prevent such activities.

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	These characterization requirements are critical to the safe operation of WIPP because of the unique nature of these wastes. These TRU wastes are unlike hazardous wastes from typical private sector industrial operations, which generally are homogeneous and result from specific manufacturing processes. DOE's defense missions varied by site, and approximately 35% of the waste was generated after the 1970's but before the implementation of the TRU Waste Characterization Quality Assurance Program Plan. Because the reliability of the available historic record on these retrievably stored wastes is inconsistent, NMED does not believe it is possible to craft a "one-size-fits-all" waste analysis program that relies exclusively on AK. Although newly generated wastes are visually examined at the time of generation, VE and AK alone may not be adequate to completely characterize the wastes. For example, without headspace gas analysis, the concentration of VOCs may be underestimated through the use of AK. As stated previously, the Permittees appear to be attempting to establish AK as the sole characterization requirement necessary for generator/storage sites to qualify their TRU mixed wastes for disposal at WIPP. The proposed changes to Attachment B4 systematically remove any objective analytical means of assessing the accuracy of AK. Not only is this proposed approach at odds with RCRA and immaterial to Section 311, it likely could not be implemented at generator/storage sites like Oak Ridge, which plan to rely extensively on sampling and analysis because of the poor quality of AK.	
3.2.a	TSD facilities such as WIPP that accept AK as a source of waste characterization information must remember a fundamental basis common to all AK data sources: process knowledge must be linked to *waste generation*. Often, large quantities of process-related data may be available, but the existence of such data does not necessarily ensure that it adequately describes the waste itself. In the case of WIPP, literally every AK summary document examined by NMED includes detailed information about what manufacturing process occurred in which room or building – even the dimensions of the rooms – instead of focusing on *waste*	The PMR does not propose a waste analysis program that relies exclusively on AK to the exclusion of sampling and analysis. See Response to Comment 1.0 and the revised PMR for a discussion of the proposed changes to the WAP. The PMR, as revised in response to NMED's comments, proposes a waste analysis program that meets the requirements of 40 CFR §264.13 and Sections 311/310. The proposed changes to the WAP will ensure that the necessary waste analysis information is obtained before it is accepted for storage and disposal. See also Appendix I attached hereto. The revised PMR includes provisions for the Permittees to request an AK sufficiency review from NMED. If NMED determines that the AK is sufficient, no additional waste analysis information needs to be collected through sampling and analysis. If NMED determines that the

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	generating data. While EPA's 1994 Waste Analysis Guidance states that "similar processes" can be used to define wastes without other sources of adequate AK, it is NMED's direct experience that this argument or analogy has not been successfully used at generator/storage sites to date. EPA provides guidance for situations that may warrant exclusive use of AK for characterization, including assignment of certain process-related waste numbers, characterization of waste not amenable to sampling, and where worker safety could be compromised. The Permittees have not demonstrated that any of the reasons listed in EPA guidance for *exclusive* use of AK are directly applicable to WIPP wastes. For example, most characteristic hazardous waste numbers cannot generally be accurately determined by assuming that "absence of liquid means absence of characteristic." Also, the current permit clearly includes sampling methods amenable to all TRU mixed waste permitted thus far; therefore, removal of the requirement to sample waste was not required due to the waste not being amenable to sampling. Finally, the Permittees have not provided any documentation to indicate that the current processes in place for waste characterization adversely compromise worker safety.	AK is insufficient, the generator/storage sites will be required to do additional sampling and analysis. The inclusion of this process in the revised PMR and the Permittees' waste analysis activities provide a high degree of confidence regarding the sufficiency of a generator/storage site's waste analysis. The PMR, as revised in response to NMED's comments, meets the requirements of §264.13 and assures that the Permittees will have the information necessary to store and dispose of TRU mixed waste at WIPP. The changes to the WAP proposed in the revised PMR, which combine the use of AK, sampling and analysis on a representative portion of the waste stream or an AK sufficiency determination by NMED, and Permittee level waste acceptance and approval processes, assure that the Permittees will obtain the information needed to safely store and dispose of TRU mixed waste at WIPP.
3.2.b	Relying upon AK alone has known limitations, as there are many instances where AK may not provide the necessary physical and chemical information. Examples include: • Assignment of characteristic waste codes is difficult in instances where specific concentration requirements within waste must be demonstrated using the TCLP procedures.	See Response to Comment 3.2.a.
3.2.c	• AK data may be inappropriate if the information is outdated.	See Response to Comment 3.2.a.
3.2.d	• AK information must be sufficiently complete to assign all hazardous waste codes. For example, MSDS are only required to list constituents that comprise 1% or more of the material it addresses. This may not be adequate to determine the occurrence and amount of all necessary constituents in the waste.	See Response to Comment 3.2.a.
3.2.e	The current permit includes an AK process that offers a	See Response to Comment 3.2.a.

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	consistent standard by which generator/storage sites can develop AK programs. Unfortunately, NMED's direct experience through the audit process shows that generator/storage sites have not consistently implemented this standard.	
3.2.f	It may be logical to assume that the AK program in the revised permit would be strengthened by this current PMR because AK is called for as the sole source of characterization information. This is not the case and, in fact, the PMR would clearly weaken the current AK program. AK changes proposed by the Permittees include, but are not limited to, the following: • Changing AK-related language so that NMED would be required to accept all generator/storage site hazardous waste determinations, even though regulations clearly allow disposal states to develop their own criteria so long as they are not less stringent than federal law.	See Response to Comment 3.2.a.
3.2.g	• Rendering AK accuracy in the permit meaningless, as it would now be based on confirmatory activities that do not encompass all items in the original waste characterization set.	See Response to Comment 3.2.a.
3.2.h	• Revising Attachment B4 to explicitly remove the inclusion of, for example, headspace gas, in sampling and analysis	See Response to Comment 3.2.a.
3.2.i	• Removing the requirement that waste with poor AK be visually examined.	See Response to Comment 3.2.a.
3.2.j	• Removing AK baseline requirements for identifying hazardous wastes.	See Response to Comment 3.2.a.
3.2.k	• Removing the requirement that container inventories be delineated into waste streams by correlating the container identification to all of the required/ supplemental acceptable knowledge information.	See Response to Comment 3.2.a.
3.2.l	• Removing requirements for when radiographic vs. VE confirmatory activities will occur.	See Response to Comment 3.2.a.
3.2.m	• Allowing disposal of incompletely characterized waste stream at WIPP.	See Response to Comment 3.2.a.
3.2.n	• Removing specific requirements for VE procedures.	See Response to Comment 3.2.a.

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3.2.o	• Removing specific requirements associated with re-evaluation of AK if not confirmed by VE/RTR.	See Response to Comment 1.0 and Response to Comment 3.2.a.
3.2.p	• Removing and/or revising (see B3-5) AK data quality objectives.	See Response to Comment 3.2.a.
3.2.q	• Reducing code assignment requirements.	See Response to Comment 3.2.a.
3.2.r	• Eliminating the requirement to maintain an auditable AK record.	See Response to Comment 3.2.a.
3.2.s	The language in 40 CFR §264.13(a) is clear and unambiguous: "*Before an owner or operator…disposes of any hazardous wastes…, he* ***must*** *obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, the analysis must contain all of the information which must be known to … dispose of the waste in accordance with this part…*" (emphasis added). As discussed in Section 2.2 above, the Permittees' proposal to eliminate waste characterization sampling and analysis and rely on AK may significantly increase the likelihood that inaccurately characterized wastes will be disposed at WIPP, and that both generator/storage sites and the WIPP facility will expose themselves to potential enforcement action under 40 CFR §264.13(a) due to inadequate characterization.	See response to Comments 1.0, 3.1 to 3.1.c and the revised PMR for a discussion of the proposed changes to the WAP. The PMR, as revised in response to NMED's comments, meets the requirements of 40 CFR §264.13 and assures that the Permittees will have the information necessary to store and dispose of the waste at WIPP. The changes to the WAP proposed in the revised PMR, which combine the use of AK, sampling and analysis on a representative portion of the waste stream or an AK sufficiency determination by NMED, and Permittee level waste acceptance and approval processes, assure that the Permittees will obtain the information needed to safely store and dispose of TRU mixed waste at WIPP.
3.2.t	NMED has expressed concern in the past about an over reliance on AK (see the June 19, 2002 *NOD for the Class 3 PMR for Centralized Waste Confirmation*). NMED is not alone, however, in emphasizing the importance of sound waste characterization. On September 15, 2003, the Environmental Evaluation Group (**EEG**) released a report entitled *Contact Handled Transuranic Waste Characterization Requirements at the Waste Isolation Pilot Plant, EEG-86*. In this report, EEG stated in the Executive Summary: *"…The current waste characterization requirements [that would be affected by HR 2754, which had not yet been passed by Congress] were not developed ad hoc, but through much technical discussion, reference to accepted standards and codes, and considerable effort by DOE employees, DOE contractors, regulatory agency staff, regulatory*	Appendix I to the Section 311 NOD Comment/Response Matrix is titled: "*Response To NOD Comments 3.2.t and 3.2.u.*" and responds to this comment.

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	agency contractors, the EEG staff, interested organizations, and/or members of the public." EEG went on to discuss and endorse the continued use of most characterization methods, stating that AK, headspace gas, RTR, and VE should be retained. EEG also stated: *"Any proposed relaxation of waste characterization requirements needs to be evaluated in sufficient detail to convince the regulatory agencies…and others that the modification is justified. Implicit in this approach is the understanding that any changes need to be made in a step-by-step transparent process and through existing regulatory procedures of the NMED…"*	
3.2.u	In its 2004 report on improving the TRU waste characterization program entitled *Improving the Characterization Program for Contact-Handled Transuranic Waste Bound for the Waste Isolation Pilot Plant*, the National Academy of Sciences' Board on Radioactive Waste Management concluded that while: "*DOE has stated that some characterization activities are too expensive and time consuming and can be modified without increasing risks…, [it] has not presented a systematic analysis to support this argument to the regulators or to the public*." The Permittees must identify the source of authority for these proposed changes to generator/storage site waste characterization requirements, the exclusive reliance on AK and the proposed changes to compliance with 40 CFR §264.13(a) by generator/storage sites and disposal facilities. The Permittees must also provide a technical justification as to why the proposed changes (which appear to decrease the accuracy of the waste analysis process) will not negatively impact the accuracy of that process and will, instead, be sufficient to accurately characterize wastes destined for WIPP.	Appendix I to the Section 311 NOD Comment/Response Matrix is titled: "*Response To NOD Comments 3.2.t and 3.2.u.*" and responds to this comment.
3.2.1	**Module II, Sec*tion II.C.1.b, Waste Analysis Plan, Waste Confirmation Methods*, page II-2.** This PMR section	The reference to the use of SW-846 has been reinserted as it applies to the revised PMR waste analysis approach.

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	proposes to remove EPA Publication SW-846 from incorporation into the permit by reference. It also proposes to remove the current requirement that the generator/storage sites use analytical methods that conform to SW-846 or alternative methods that have received prior approval from NMED. This change does not appear to be related to Section 311. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	
3.2.2	**Module II, *Section II.C.1.c, Waste Analysis Plan, Container Selection Methods*, pages II-2 and II-3**. The PMR proposes to eliminate the current permit language regarding the statistical methods that are used for sampling and analysis of container contents. The PMR also refers to Attachment B1 for the selecting containers for VE and RTR. Attachment B1, however, does not define any selection methods. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The redline/strikeout version of the revised PMR eliminates the proposed revisions and restores the original language with the following exception. The selection of containers for performing VE as a QC check on radiography is deleted. Instead, the Permittees perform this radiography in examining each waste stream in each shipment (or the Permittees may examine and verify waste using VE or an examination of VE records). The revised PMR provides selection criteria for the Permittees for performing these waste analysis activities and specifies related QC measures in new HWFP Attachment B7, and requires the Permittees to use the random selection of a subpopulation of the containers for this waste analysis.
3.2.3	**Module II, *Section II.C.1.d Waste Analysis Plan, Quality Assurance Objectives*, page II-3, 1st and 2nd ¶.** The PMR proposes to revise this section to remove any requirement for reviewing, validating, and verifying any analytical data that may be used in characterization. This implicitly assumes that the AK record is complete and adequate, and that no supplementary analysis will be needed for retrievably-stored or newly-generated waste. The PMR proposes to remove references to characterization activities from the Quality Assurance Objectives. Additionally, this section proposes to eliminate requirements to identify, document, and report operational variances. The Permittees must clearly identify the source of authority for these proposed revisions or delete the proposed revisions.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.4	**Module II, *Section II.C.3(i) and (j) Treatment, Storage and Disposal Facility Waste Acceptance Criteria (TSDF-WAC)*, page II-6.** The PMR proposes to eliminate the current permit requirements that all waste containers must have undergone VOC headspace gas sampling and further characterization by VE or RTR before a generator/storage facility may submit TRU-mixed wastes for storage or emplacement at WIPP. The Permittees must clearly identify the source of authority for these proposed revisions or delete the proposed revisions.	Sections 311(b)/310(b) state that the exclusive method for demonstrating compliance with the environmental performance standards shall be "by monitoring airborne volatile organic compounds in underground disposal rooms in which waste has been emplaced until panel closure." VOCs will no longer be measured on a container basis. Therefore, the PMR proposes to eliminate the current permit requirement that 100% of the waste containers be subject to headspace gas sampling and analysis for purposes of demonstrating compliance with the disposal room performance standards.

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3.2.5	**Attachment B, *Introduction and Attachment Highlights*, page B-3, 4th ¶.** The PMR proposes to remove the criteria that a waste must be comprised of at least 50 percent of the waste in the container. This change does not appear to be related to Section 311. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	The revised PMR no longer proposes this change.
3.2.6	**Attachment B, *Section B-1a, Waste Stream Identification*, page B-5, 4th ¶.** The Permittees propose to eliminate a requirement that waste with an inadequate AK record must be characterized as newly generated waste. In addition, this paragraph proposes to eliminate requirements that waste may be characterized in lots if all containers are not available. This change does not appear to be related to Section 311. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	The distinction between newly generated and retrievably stored waste is maintained in the HWFP. The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.7	**Attachment B, *Section B-1b, Waste Summary Category Groups and Hazardous Waste Accepted at WIPP*, page B-6, 2nd ¶.** The PMR proposes to delete the use of waste matrix codes, which provide valuable waste characterization and waste management information. This change does not appear to be related to Section 311. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	The revised PMR no longer proposes this change.
3.2.8	**Attachment B, *Section B-2, Waste Parameters*, pages B-8 and B-9.** The Permittees propose to eliminate current permit requirements that a series of chemical and physical analysis characterization activities must be performed on TRU-mixed wastes before they can be accepted at WIPP. This change does not appear to be related to Section 311 and is contrary to RCRA waste characterization requirements. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.9	**Attachment B, *Section B-3 Waste Analysis Methods*, page B-9, 1st ¶.** See 3.2.8 above.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.10	**Attachment B, Section B-3a, *Sampling and Analytical Methods*, pages B-9 through B-11.** See 3.2.8 above.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed

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		language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.11	**Attachment B, *Section B-3a Acceptable Knowledge*, page B-12.** The Permittees propose to change the intent of the use of AK in the current Section B-3b from using AK as one tool in mixed waste characterization activities to using AK to "document" the results of the generator/storage sites' characterization activities. Also see 3.2.8 above. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	In the revised PMR, Section B-3a has been restored to Section B-3b and has been revised. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.12	**Attachment B, *Section B-3b Radiography and Visual Examination*, pages B-12 and B-13.** The Permittees propose to limit the way that VE and RTR are currently used in the permit for waste characterization. Although it is occasionally possible to characterize a waste through the use of VE and/or RTR alone (e.g., the discovery of lead batteries in debris waste) these methods cannot be used as the primary characterization methods. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	In the revised PMR, Section B-3b has been restored to B-3c and has been revised. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.13	**Attachment B, *Section B-3c Confirmation of TRU Mixed Waste*, pages B-13 through B-18**. The Permittees propose to change the current *Section B-3c Characterization Techniques and Frequency for Newly Generated and Retrievably- Stored Waste* to *Confirmation of TRU Mixed Waste*. As discussed above, NMED strongly disagrees with the Permittees' conclusion that Section 311 eliminates the current permit requirements to characterize wastes through sampling and analysis. For example, the Permittees do not specifically explain how RTR and VE will be used to verify that wastes are not ignitable, corrosive or reactive. The PMR also proposes to revise the current permit to randomly select a "minimum of ten percent of the waste containers" to be "confirmed" by RTR and/or VE. In waste streams where only a small fraction of drums contain prohibited items, it is possible that none of the drums with prohibited items will be examined and will, therefore, be disposed of at WIPP. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	Attachment B, Section B-3c referred to in this comment has been restored as Section B-3d, *Waste Analysis Techniques and Frequency for Newly Generated and Retrievably Stored Waste*. Permit Attachment B7, *Permittee Level TRU Mixed Waste Approval and Acceptance Processes*, provides the requirements for Permittees' waste analysis activities. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.14	**Attachment B, *Section B-3c Confirmation of TRU Mixed***	The Permit section referred to in this comment is now in Permit Attachment B7-1b and has

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	***Waste*, page B-13, 1st ¶.** NMED's questions related to subpopulation selection and statistical analyses are based on the changes submitted through comment by the Permittees dated March 19, 2004. A written procedure must be prepared for conducting the proposed random confirmation sampling and statistical analysis. The processes must be clearly and completely described, and suitable for application at WIPP or at generator/storage sites. Definitions must be provided for such terms as *waste stream, waste stream lot,* and *consistent with the waste stream description.* The methods proposed to assure compliance with those definitions must also be described. Revise the PMR, either to fully explain and better justify the change(s) or to remove the change(s).	been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.15	**Attachment B1, *Section B1-2, Visual Examination*, page B1-27.** The Permittees propose to remove the requirement that VE must be used to confirm RTR and that the sites must maintain a site miscertification rate to determine the number of containers that must undergo confirmatory visual examination. In addition, all references to validation methods with respect to sampling and analysis have been removed. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The selection of containers for performing VE as a QC check on radiography (i.e., determining the miscertification rate) is deleted. Instead, the Permittees perform this radiography in examining each waste stream in each shipment (or the Permittees may examine waste using VE or an examination of VE records). Permit Attachment B7 provides selection criteria for the Permittees for performing waste analysis activities and specifies related QC measures, including data validation and requires the Permittees to use the random selection of a subpopulation of the containers for the Permittees' waste analysis activities. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.16	**Attachment B1, *Section B1-2a: Method Requirements*, page B1-27.** The PMR proposes to allow documented AK to confirm the waste stream description in cases where the contents of inner bags cannot be seen, without the current characterization procedures for when AK is insufficient. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The Methods Requirements for VE are now in HWFP Attachment B7-3d(2). See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.17	**Attachment B1, *Section B1-3, Waste Material Parameter Estimation*, page B1-29.** The Permittees have added a new section that proposes to assign waste material parameter weights based upon ratios of the examined drums and the drum waste weight. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions. See also 3.2.5 above.	The revised PMR, Attachment B-3b, proposes the use of AK to estimate waste material parameter weights because, based on the changes proposed in the revised PMR, not all waste will be subject to testing or examination using methods that allow the estimation of material parameter weights. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.18	**Attachment B3, *Section B3-1 Validation Methods*, pages B3-1 through B3-12.** The PMR proposes definitional	The text referred to in this comment has been restored in the revised PMR with one exception. The paragraph dealing with non-conformances has been moved to HWFP Attachment B3-12,

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	changes for precision, accuracy, representativeness, comparability, and completeness and the removal of the requirement for notification of non-conformances. These changes do not appear to be related to Section 311. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	*Nonconformances*.
3.2.19	**Attachment B3, *Section B3-2 Radiography*, pages B3-12 and B3-13.** The PMR proposes definitional changes for quality assurance objectives, precision, accuracy, representativeness, completeness and comparability, as these terms relate to RTR. These changes do not appear to be related to Section 311. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The Permit section referred to in this comment has been moved to Permit Attachment B7 and has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.20	**Attachment B3, *Section B3-3 Visual Examination*, pages B3-13 and B3-14**. The PMR proposes definitional changes for quality assurance objectives, precision, accuracy, representativeness, completeness and comparability, as these terms relate to VE. These changes do not appear to be related to Section 311. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The Permit section referred to in this comment has been moved to Permit Attachment B7 and has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.21	**Attachment B3, *Deleted Section B3-5 Gas Volatile Organic Compound Analysis*, pages B3-14 through B3-16.** The PMR proposes to delete quality assurance objectives, precision, accuracy, calibration, method detection limit, program required quantification limit, representativeness, completeness and comparability, as these terms relate to gas volatile organic compound analysis. These changes do not appear to be related to Section 311. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	Section B3-4 of the revised PMR restores quality assurance objectives, precision, accuracy, calibration, method detection limit, program required quantification limit, representativeness, completeness and comparability.
3.2.22	**Attachment B3, *Deleted Section B3-6 Total Volatile Organic Compound Analysis*, pages B3-16 and B3-17.** The PMR proposes to delete quality assurance objectives, precision, accuracy, calibration, method detection limit, program required quantification limit, representativeness, completeness and comparability, as these terms relate to total volatile organic compound analysis. These changes do not appear to be related to Section 311. The Permittees must identify the source of authority for these proposed changes or	Section B3-5 of the revised PMR restores quality assurance objectives, precision, accuracy, calibration, method detection limit, program required quantification limit, completeness, comparability, and representativeness.

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	delete these proposed revisions.	
3.2.23	**Attachment B3, *Deleted Section B3-7 Total Semi-Volatile Organic Compound Analysis,* pages B3-18 and B3-19.** The PMR proposes to delete quality assurance objectives, precision, accuracy, calibration, method detection limit, program required quantification limit, representativeness, completeness and comparability, as these terms relate to total semi-volatile organic compound analysis. These changes do not appear to be related to Section 311. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	Section B3-6 of the revised PMR restores quality assurance objectives, precision, accuracy, calibration, method detection limit, program required quantification limit, completeness, comparability, and representativeness.
3.2.24	**Attachment B3, *Deleted Section B3-8 Total Metal Analysis,* pages B3-19 through B3-21.** The PMR proposes to delete quality assurance objectives, precision, accuracy, calibration, method detection limit, program required quantification limit, representativeness, completeness and comparability, as these terms relate to total metal analysis. These changes do not appear to be related to Section 311. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	Section B3-7 of the revised PMR restores quality assurance objectives, precision, accuracy, calibration, program required detection limits, program required quantification limit, completeness, comparability, and representativeness.
3.2.25	**Attachment B3, *Proposed Section B3-4, Waste Material Parameter Estimation,* page B3-21.** The Permittees have added a new section that proposes to assign waste material parameter weights based upon ratios of the examined drums and the drum waste weight. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions. See also 3.2.5 and 3.2.17 above.	The revised PMR, Attachment B-3b, proposes the use of AK to estimate waste material parameter weights because, based on the changes proposed in the PMR, not all waste will be subject to testing or examination using methods that allow the estimation of material parameter weights. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.26	**Attachment B3, *Section B3-5 Acceptable Knowledge,* pages B3-22 and B3- 23.** The Permittees propose to amend the data quality requirements for AK documentation. These changes do not appear to be related to Section 311. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	Section B3-8 of the revised PMR restores the data quality requirements and modifies them to accommodate waste analysis activities performed by the Permittees. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.27	**Attachment B3, *Section B3-6 Data Review, Validation and Verification Requirements,* pages B3-23 and B3-24.** See 3.2.8 above.	Section B3-9 of the revised PMR restores data review, validation, and verification requirements, and modifies them to accommodate waste analysis activities performed by the Permittees. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.28	**Attachment B3, *Section B3-6a, Data Generation Level,*	Section B3-9 of the revised PMR restores data generation level activities and modifies them to

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	page B3-25. See 3.2.8 above.	accommodate waste analysis activities performed by the Permittees. Specifically, reviews by technical supervisors and a QA representative are assigned to the Site Project Manager to eliminate redundancy. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.29	**Attachment B3, *Section B3-6a(1), Independent Technical Review*, pages B3-26 and B3-27.** See 3.2.8 above.	See Response to Comment 3.2.28.
3.2.30	**Attachment B3, *Section B3-6a(2), Technical Supervisor Review*, page B3-27.** See 3.2.8 above.	See Response to Comment 3.2.28.
3.2.31	**Attachment B3, *Section B3-6a(3), QA Officer Review*, page B3-28.** See 3.2.8 above.	See Response to Comment 3.2.28.
3.2.32	**Attachment B3, *Section B3-6b Project Level*, page B3-28.** See 3.2.8 above.	The revised PMR restores the Project Level Review.
3.2.33	**Attachment B3, *Section B3-6b(1) Site Project QA Officer*, page B3-29**. See 3.2.8 above.	See Response Comment 3.2.28.
3.2.34	**Attachment B3, *Section B3-6b(2) Site Project Manager*, pages B3-29 and B3-30**. See 3.2.8 above.	Section B3-9b(1) of the revised PMR restores the Site Project Manager Review and assigns those reviews previously performed by the Technical Supervisor and the QA officers to the Site Project Manager to eliminate redundancy. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.35	**Attachment B3, *Section B3-6b(3) Prepare Site Project QA Officer Summary and Data Validation Summary*, pages B3-30 and B3-31**. See 3.2.8 above.	Section B3-9b(2) of the revised PMR restores these activities and assigns them all to the Site Project Manager to eliminate redundancy. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.36	**Attachment B3, *Section B3-6b(4) Prepare Waste Stream Characterization Package*, page B3-31.** See 3.2.8 above.	Section B3-9b(3) of the revised PMR restores these activities and assigns them all to the Site Project Manager to eliminate redundancy. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.37	**Attachment B3, *Section B3-8b Project Level*, pages B3-35 through B3-38.** See 3.2.8 above.	Section B3-11b of the revised PMR restores the Project Level Activities with modifications to accommodate RH TRU mixed waste and confirmation by the Permittees. In addition, activities are assigned to the Site Project Manager. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.38	**Attachment B3, *Section B3-10 Special Training Requirements and Certifications*, page B3-41, *3rd* ¶.** See	Section B3-13 of the revised PMR restores these requirements.

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	3.2.8 above.	
3.2.39	**Attachment B4, *Section B4-1, Introduction*, page B4-1.** The PMR proposes to change the clear and explicit language in this section, which shows that headspace gas sampling and homogenous sampling are defined as characterization requirements. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions. Also see 3.2.8 above.	The language referred to in this comment has been restored.
3.2.40	**Attachment B4, *Section B4-2 Acceptable Knowledge Documentation*, page B4-2.** The original intent of the section was to mandate that for waste with poor AK, VE must be performed. The proposed changes eliminate this requirement. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The PMR did not propose any changes to Section B4-2, page B4-2. Section B4-2 has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.41	**Attachment B4, Section B4-3: Acceptable Knowledge Training, Procedures, and other Requirements, page B4-11, 2nd ¶.** See 3.2.8 above.	Section B4-3 has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.42	**Attachment B4, *Section B4-3b Acceptable Knowledge Assembly, Compilation, and Confirmation Procedures and Required Administrative Controls*, pages B4-8 and B4-9.** The Permittees propose to delete specific permit conditions regarding the use and retention of AK information for the assignment of hazardous waste codes. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.2.43	**Attachment B4, *Section B4-3c Criteria for Assembling an Acceptable Knowledge Record and Delineating the Waste Stream*, page B4-9.** The Permittees propose to eliminate the current permit requirement to define the generation rate for newly-generated wastes. This proposed deletion is problematic because NMED has found during audits that sites often generate information for a small fraction of the waste in a waste stream without including the entire waste stream, leading to inaccurate characterization. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The revised PMR restores the text referred to in this comment.
3.2.44	**Attachment B4, *Section B4-3d Requirements for Confirmation of Acceptable Knowledge Information*, pages B4-9 4th ¶ and B4-10, 1st ¶.** NMED used the term	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language.

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	"confirmation" in this section of the current permit in its dictionary sense. The Permittees are attempting to treat this section as Section 311 confirmation instead of as waste characterization. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	See Response to Comment 3.1.1 (second and third paragraphs).
3.2.45	**Attachment B4, *Section B4-3e Acceptable Knowledge Quality Assurance Objectives,* pages B4-13 and B4-14.** The Permittees propose to essentially delete the former Section *Acceptable Knowledge Data Quality Requirements* with the section referenced above. Data requirements are mandatory language while "objectives" are not. The Permittees also propose to remove the requirement that generator/storage sites share information to ensure data comparability. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions. Also see 3.2.8 above.	The data quality requirements for AK are found in HWFP Attachment B3-8. The Permittees are proposing to incorporate them into this section by reference to Attachment B3-8 as opposed to repeating them. In addition, minor changes were made to accommodate waste analysis activities performed by the Permittees. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs). The Permittees believe this change is necessary in order to waste analysis activities performed by either the generator/storage sites or the Permittees as required by Section 311 of Pub. L. 108-137 and Section 310 of Pub. L. 108-447.
3.2.46	**Proposed Deletions of Tables and Figures.** The Permittees propose to modify or delete a number of permit attachments, tables and figures in Attachments B, B1, B2, B3 and B4, which are related to waste characterization. The Permittees must identify the source of authority for deleting the following permit attachments, figures and tables: • Module II Permit Attachments, pages II-17 and II-18; • Attachment B, B-5 List of References, page B-34; • Attachment B, *Table B-1, Summary of Hazardous Waste Characterization Requirements for Transuranic Mixed Waste*, pages B-38 and B-39; • Attachment B, *Table B-2, Maximum Allowable VOC Room-Averaged Headspace Concentration Limits (PPMV),* page B-40; • Attachment B, *Table B-3, Headspace Target Analyte List and Methods*, page B-41; • Attachment B, *Table B-4, Required Organic Analyses and Test Methods*	The revised PMR restores the Tables and Figures referenced in the comments with the exception of: • Attachment B, *Table B-2, Maximum Allowable VOC Room-Averaged Headspace Concentration Limits (PPMV),* page B-40; • Attachment B, *Table B-7, WIPP Waste Information System Data Fields*, pages B-50 and B-51 (eliminated from Attachment B, moved to Attachment B7); • Attachment B, *Figure B-2, Data Collection Design for Characterization of Newly Generated Waste*, page B-56 • Attachment B, *Figure B-3, Data Collection Design for Characterization of Retrievably Stored Waste*, page B-57; • Attachment B, *Figure B-5, TRU Mixed Waste Screening Flow Diagram*, page B-58; • Attachment B1, *Figure B1-7, Overall Programmatic Approach to Visual Examination*, page B1-56; • Attachment B2, *Table B2-1, Number of Waste Containers Requiring Visual Examination*, page B2-12; • Attachment B3, B3-12 List of References, page B3-42; • Attachment B3, *Table B3-11, Testing Batch Data Report Contents*, pages B3-59 through B3-61; • Attachment B3, *Table B3-12, Sampling Batch Data Report Contents*, pages B3-62 through B3-64; • Attachment B3, *Table B3-13, Analytical Batch Data Report Contents*, page B3-65;

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	Organized by Organic Analytical Groups, pages B-42 and B-43; • Attachment B, *Table B-5, Summary of Sample Preparation and Analytical Methods for Metals*, page B-44; • Attachment B, *Table B-6, Summary of Parameters, Characterization Methods, and Rationale for CH Transuranic Mixed Waste (Stored Waste)*, pages B-45 through B-48; • Attachment B, *Table B-2, WIPP Waste Information System Data Fields*, pages B-50 and B-51; • Attachment B, *Figure B-2, Data Collection Design for Characterization of Newly Generated Waste*, page B-56 • Attachment B, *Figure B-3, Data Collection Design for Characterization of Retrievably Stored Waste*, page B-57; • Attachment B, *Figure B-5, TRU Mixed Waste Screening Flow Diagram*, page B-58; • Attachment B1, B1-6 List of References, page B1-31; • Attachment B1, *Table B1-1, Gas Sample Requirements*, page B1-34; • Attachment B1, *Table B1-2, Summary of Drum Field QC Headspace Sample Frequencies*, page B1-35; • Attachment B1, *Table B1-3, Summary of Sampling Quality Control Sample Acceptance Criteria*, page B1-36; • Attachment B1, *Table B1-4, Sample Handling Requirements for Homogeneous Solids and Soil/Gravel*, page B1-37; • Attachment B1, *Table B1-5, Headspace Gas Drum Age Criteria Sampling Scenarios*, page B1-38; • Attachment B1, *Table B1-6, Scenario 1 Drum Age Criteria (in days) Matrix*, page B1-39;	• Attachment B3, *Table B3-14, Data Reporting Requirements*, page B3-66; • Attachment B4, *Figure B4-2, Confirmation of Acceptable Knowledge*, page B4-22; and • Attachment B6, *Waste Analysis Plan (WAP) General Checklist for Use at DOE's Generator/Storage Sites*, pages B6-12 through B6-115. The above Tables and Figures have been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).

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	• Attachment B1, *Table B1-7, Scenario 2 Drum Age Criteria (in days) Matrix*, page B1-40; • Attachment B1, *Table B1-8, Scenario 3 Packaging Configuration Groups*, pages B1-41 and B1-42; • Attachment B, *Table B1-9, Scenario 3 Drum Age Criteria (in days) Matrix for S5000 Waste by Packaging Configuration Group*, pages B1-43 and B1-44; • Attachment B1, *Table B1-10, Scenario 3 Drum Age Criteria (in days) Matrix for S3000 Waste by Packaging Configuration Group*, pages B1-45 and B1-46; • Attachment B1, *Figure B1-1, Headspace Gas Drum Age Sampling Scenario Selection Process*, page B1-50; • Attachment B1, *Figure B1-2, Headspace Sampling Manifold*, page B1-51; • Attachment B1, *Figure B1-3, SUMMA® Canister Components Configuration*, page B1-52; • Attachment B1, *Figure B1-4, Schematic Diagram of Direct Canister with the Ploy Bag Sampling Head*, page B1-53; • Attachment B1, *Figure B1-5, Rotational Coring Tool (Light Weight Auger),* page B1-54; • Attachment B1, *Figure B1-6, Non-Rotational Coring Tool (Thin Walled Sampler),* page B1-55; • Attachment B1, *Figure B1-7, Overall Programmatic Approach to Visual Examination*, page B1-56; • Attachment B2, References, page B2-10; • Attachment B2, *Table B2-1, Number of Waste Containers Requiring Visual Examination*, page B2-12; • Attachment B2, *Figure B2-1, Statistical Approach to Sampling and Analysis of Waste Streams of Retrievably Stored*	

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	Homogeneous Solids and Solid/Gravel, page B2-14; • Attachment B3, B3-12 List of References, page B3-42; • Attachment B3, *Table B3-2, Gas Volatile Organic Compounds Target Analyte List and Quality Assurance Objectives*; page B3-47; • Attachment B3, *Table B3-3, Summary of Laboratory Quality Control Samples and Frequencies for Gas Volatile Organic Compound Analysis*, page B3-48; • Attachment B3, *Table B3-4, Volatile Organic Compounds Target Analyte List and Quality Assurance Objectives*, page B3-49; • Attachment B3, *Table B3-5, Summary of Laboratory Quality Control Samples and Frequencies for Volatile Organic Compound Analysis*, pages B3-50 and B3-51; • Attachment B3, *Table B3-6, Semi-Volatile Organic Compound Target Analyte List and Quality Assurance Objectives*, page B3-52; • Attachment B3, *Table B3-7, Summary of Laboratory Quality Control Samples and Frequencies for Semi-Volatile Organic Compounds Analysis*, pages B3-53 and B3-54; • Attachment B3, *Table B3-8, Metals Target Analyte List and Quality Assurance Objectives*, pageB3-55; • Attachment B3, *Table B3-9, Summary of Laboratory Quality Control Samples and Frequencies for Metal Analysis*, pages B3-56 and B3-57; • Attachment B3, *Table B3-10, Minimum Training and Qualifications Requirements,* page B3-58; • Attachment B3, *Table B3-11, Testing*	

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	Batch Data Report Contents, pages B3-59 through B3-61; • Attachment B3, *Table B3-12, Sampling Batch Data Report Contents*, pages B3-62 through B3-64; • Attachment B3, *Table B3-13, Analytical Batch Data Report Contents*, page B3-65; • Attachment B3, *Table B3-14, Data Reporting Requirements*, page B3-66; • Attachment B3, *Figure B3-1, Overall Headspace Gas Sampling Scheme Illustrating Manifold Sampling*, page B3-69; • Attachment B4, *Figure B4-2, Confirmation of Acceptable Knowledge*, page B4-22; and • Attachment B6, *Waste Analysis Plan (WAP) General Checklist for Use at DOE's Generator/Storage Sites*, pages B6-12 through B6-115.	
3.3	***Differentiation between "retrievably stored" and "newly generated" TRU wastes*** The PMR alleges that there is no longer a need to distinguish between retrievably stored and newly generated wastes because the characterization and confirmation methods are the same for all TRU mixed wastes, regardless of the time of generation. The PMR provides no technical or regulatory justification for this new approach. Both NMED and EPA have consistently differentiated between retrievably stored wastes and newly generated wastes because of the inherent uncertainties in characterizing wastes that were generated before the implementation of the Permittees' TRU Waste Characterization QAPP. NMED is concerned that the PMR's focus on the use of AK for characterization and RTR and VE for "confirmation" for retrievably stored waste may lead to improperly characterized waste being disposed of at WIPP. The Permittees have not demonstrated in their prior submittals any correlation between waste characterization accuracy to date and the "uncertainties associated with older, poorly documented waste streams generated fifteen to thirty years ago that have yet to be characterized, considering the	The revised PMR maintains the distinction between newly generated and retrievably stored waste.

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	waste emplaced to date reflects newer, better documented waste streams" (NMED Comments on Technical papers Submitted by DOE to NAS WIPP Committee "Optimizing the Characterization and Transportation of Transuranic Waste Destined for the Waste Isolation Pilot Plant" Project Identification Number: BRWM-U-02-01-A (November 7, 2003 letter from Sandra Martin, Acting Bureau Chief, Hazardous Waste Bureau to Dr. Kevin Crowley, Director, Board on Radioactive Waste Management, the National Academy of Science)). EPA has raised similar concerns during the rulemaking processes for the original and alternative provision criteria for the certification of WIPP's compliance with the disposal regulations (63 Fed. Reg.27389-27393 (May 18, 1998), 67 Fed. Reg. 51930-51946 (August 9, 2002) and 69 Fed. Reg. 42571-42583 (July 16, 2004)). For example, in the preamble to the proposed alternative certification rule, EPA stressed the importance of good waste characterization "in the early stages of disposal when DOE is characterizing waste that TRU waste sites packaged years before the establishment of the WIPP Compliance Criteria" (67 Fed. Reg. 51935, August 9, 2002). Conversely, when discussing to-be-generated wastes in the original certification rule preamble EPA stated that: "Hazardous and radioactive constituents in to-be-generated wastes will be documented and verified at the time of generation to provide acceptable knowledge for the waste stream" (63 Fed. Reg. 27392, May 18, 1998).	
3.3.1	The Permittees must resolve the inconsistencies between the current permit's differentiation between "retrievably stored" and "newly generated" TRU wastes and the PMR. The Permittees must also cite the authority for the proposed changes. **Attachment B, *Introduction and Attachment Highlights*, page B-2, 3rd ¶.** The PMR proposed to revise the permit to remove the discussion of the differences between newly generated TRU mixed wastes and retrievably stored TRU mixed wastes. This change does not appear to be related to Section 311. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	The revised PMR maintains the distinction between newly generated and retrievably stored waste. The permit section referred to has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs). .

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3.3.2	**Attachment B, *B-1a Waste Stream Identification*, page B-5, 1st ¶.** The PMR proposes to revise the permit to remove the requirement that "[i]f acceptable knowledge for retrievably stored waste does not comply with these requirements (e.g., heterogeneous Debris Waste in Summary Category S5000), the Permittees will reexamine (and characterize) the waste in the same manner as newly generated waste." This change does not appear to be related to Section 311, and would have the effect of removing the requirement that containers with poor AK must be visually examined. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	The revised PMR maintains the distinction between newly generated and retrievably stored waste. The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.3.3	**Attachment B, *B-3c Confirmation of TRU Mixed Waste* pages B-13 through B-18.** The PMR proposes elimination of retrievably stored/newly generated waste distinctions and also indicates that hazardous waste determinations will be completed by the generator/storage sites. This change does not appear to be related to Section 311. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	The revised PMR maintains the distinction between newly generated and retrievably stored waste. The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.3.4	**Attachment B4, *Section B4-3d Requirements for Confirmation of Acceptable Knowledge Information*, B4-9 through B4-13**. The PMR proposes to revise the permit to remove the distinction between newly generated TRU mixed wastes and retrievably stored TRU mixed wastes. This change does not appear to be related to Section 311. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.4	***Permittees' Compliance with 40 CFR §264.13*** The Permittees' responsibilities under 40 CFR §264.13 are also clear and unambiguous. Although the Permittees allege that Section 311 limits their responsibilities under these subparts to reviewing the "confirmation" activities performed by the generator/storage sites, there is no language in 40 CFR §264.13 that supports this claim. Federal and state laws make it clear that the burden is on the off-site disposal facility to ensure that the waste is acceptable for disposal. Since the Permittees historically claimed in their permit application that on-site characterization at WIPP was neither feasible nor	The Permittees, in response to NMED's comments are proposing a revised waste analysis program that meets the requirements of 40 CFR §264.13. The waste analysis requirements of 40 CFR §264.13 are implemented by a facility's waste analysis plan, which "describes the procedures which [the facility] will carry out to comply with paragraph (a) of this Section." 40 CFR §264.13(b). The specific requirements which WIPP must meet to comply with 40 CFR §264.13 are found in the WIPP WAP. The WAP, as revised by the PMR, describes the procedures for generator/storage site waste analysis and for the Permittee level TRU waste approval and acceptance process.

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	desirable, the audit process was incorporated in the current permit as an alternative methodology to allow the Permittees to meet their regulatory obligations. The PMR does not include or reassess the need for any on-site "fingerprinting" of waste content (40 CFR §264.14(c)). If the audits are considered a replacement for fingerprinting and, under the Permittees' interpretation of Section 311, the auditors would be limited to examining only "paperwork" and cannot request chemical sampling/analysis, there would appear to be no functional safeguards in place to prevent prohibited wastes from being shipped to and/or emplaced in WIPP.	
3.4.a	NMED has identified AK issues during observations of numerous generator/storage site audits that highlight the potential for characterization error. Recent examples of AK issues include but are not limited to: **Audit A-02-15, Nevada Test Site (NTS)** 1) The NTS AK Summary report had several deficiencies which should be addressed;	The Permittees, during the audit process at a generator site, focus entirely on whether that site's AK program meets the WAP AK requirements. If a programmatic or waste stream specific requirement has not been met, a concern is identified that must be addressed. The revised PMR does not change this process or these requirements. The AK must still be deemed to be sufficient. If the AK is not sufficient, additional testing will be required. In addition to identifying issues of non-compliance during the audit, the audit team provides observations and recommendations to highlight potential problems or to suggest changes that would enhance an already compliant program. The three NTS items identified by NMED were noted by the audit team in recommendations and an observation that addressed primarily editorial issues resulting from errors during document revision and was not indicative of insufficient or inadequate AK.
3.4.b	2) The NTS AK Container Inventory Database, which appears to be an excellent source of AK information, is not included as an AK source document;	See Response 3.4.a
3.4.c	3) The narrative supporting the Waste Stream Profile Form, NTLLNL-S5400-332.01A, is not consistent with the AK Summary Report.	See Response 3.4.a
3.4.d	**Audit A-03-03, Rocky Flats Environmental Technology Site (RFETS) –** 1) The RFETS AK data assembly, review, compilation, and verification steps could be improved;	See the response to 3.4.a. During the audit process, the Permittees determined the RFETS AK program to be sufficient and compliant but those improvements could be made. The audit team provided recommendations addressing the two RFETS issues cited by NMED.
3.4.e	2) The AK Accuracy Report could be improved by specifying the time period that each characterization element discussed in the report "covers" and if a consistent reporting period were used.	See Response 3.4.a
3.4.f	**Audit A-03-05, Advanced Mixed Waste Treatment Project (AMWTP) –**	The issue of the representativeness of the population of RFETS sludge utilized for the solids sampling program conducted by Bechtel, solids waste containers from outside this population

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	1) An Observer Inquiry presented by NMED at an earlier AMWTP audit dealing with the appropriateness of the solid sampling program sample selection was being examined but had not been resolved, and this, too, was recognized by DOE representatives;	shipped to WIPP by BNFL and subsequent solids sampling conducted and/or planned by BNFL has been addressed through a series of exchanges between the site and CBFO. The Permittees believe that this issue is unrelated to AK sufficiency. The characterization of the affected waste streams was not compromised by this procedural error.
3.4.g	2) Low-level waste should be better presented in the AK summary;	Since WIPP does not accept low level waste, the Permittees assume that this comment is requesting additional information regarding the TRU waste at the INL that is <100 nCi/g. This is an issue that is related to load management, an issue of interest to the EPA, and is not impacted by the revised PMR.
3.4.h	3) AK procedure 8.13 includes requirements that are sometimes not adequately reflected in the resulting AK Summary or related documents;	See response to 3.4.a. The Permittees reviewed the NMED response to the A-03-05 audit report and find no reference to this issue. The AMWTP AK was judged to be sufficient.
3.4.i	4) The AK Summary should be a stand alone document in that technical information should be adequately presented; 5) Waste should be [better] tracked to ensure that the waste streams are adequately identified and subsequently characterized	See response to 3.4.a. The comparable WAP reference to the WAC citation is B4-3c requiring an "auditable record", a requirement not impacted by the revised PMR. DOE/WIPP-02-3122, Section A.2.2, requires that AK information, "…will be documented either in the AK summary report for the waste characterization of the waste stream or in another controlled document approved by the Site Project Manager." The AK Summary addresses an auditable trail, existing from summary information to supporting AK source documentation. Clearly, the AK Summary is a significant AK source document, providing applicable references and justifications. Although a "stand alone" AK summary may be preferable, CBFO believes the method used to document this information meets the applicable program requirements. The Permittees concur that sites must be able to track individual waste containers as they move through the characterization process. The issue identified and corrected at AMWTP dealt with a process for determining the current on-site inventory that involved hand calculations not proceduralized but did not affect either the correct identification or characterization of waste containers.
3.4.j	**Audit A-03-14, Hanford Recertification Audit** 1) The site sought to inappropriately apply RFETS data to a Hanford waste stream;	The Permittees agree that there was a question raised regarding the applicability of the RFETS solids sampling data performed for ash waste at RFETS to the RFETS ash inventory at Hanford. Solids data presented at the audit for RFETS ash at Hanford was rejected by the audit team. However, this issue represents a noncompliance issue with confirmatory testing and does not reflect insufficient or inadequate AK.
3.4.k	2) AK Accuracy calculations were of question: with respect to AK Accuracy, the site does not report VE/RTR;	The Permittees concur that the AK accuracy calculations did not account for instances where lead was found by RTR in a non-mixed drum. CAR 03-064 was written against this CAQ, ~~and~~ was determined to be non-significant and has been satisfactorily resolved, and closed. The Permittees assert that this is not an example of insufficient AK. Furthermore, although the revised PMR does not require RTR of all containers, the Permittees believe that the presence of lead in a stream designated to be non-mixed will be captured by site procedures established to screen out prohibited items. The sites are not required by the Permit to report instances where HWNs assigned by AK are not confirmed by RTR/VE.
3.4.l	3) AK Summaries should be examined to ensure that	See response to 3.4.a. The Permittees issued a recommendation to the site that included the

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	technical information is adequately presented;	concerns raised by NMED. These issues did not impact WAP AK compliance and were not examples of insufficient or inadequate AK.
3.4.m	4) Procedure 7.1.9, Section 4.3, requires only that general physical form information (presence/absence) be collected, but it would be more appropriate if this procedure required collection of waste matrix code determinations;	See response to 3.4.a. The Permittees issued a recommendation.
3.4.n	5) Traceability analysis was complicated by lack of AK-specific data in a centralized location, and lack of a database that tracks drum status with respect to the TRU WIPP characterization process (i.e., like TRIPS, WEMS, etc);	See response to 3.4.a. The Permittees issued a recommendation.
3.4.o	6) Outstanding issues identified in Audit A-2-23 had not been resolved, including questions pertaining to assignment of hazardous waste codes;	See response to 3.4.a. The Permittees issued a recommendation.
3.4.p	7) Assignment of a large number of containers to a very general waste matrix code to minimize the number of waste streams, even though container-specific information is available that would allow differentiation of waste streams;	Under the terms of the revised PMR, the Permittees intend to continue to apply WAP requirements to site waste stream designation procedures. Where there are clear distinctions regarding a) a process or activity, b) waste material parameters and c) hazardous constituents and segregation in packaging is documented, the Permittees will require the identification of separate streams.
3.4.q	8) Revision of procedure 7.1.9 to include specific trigger points whereby WMC data is assessed was not performed.	See response to 3.4.a. The current process for assigning the WMC code and the confirmation of the code assignment is judged to be compliant. Under the revised PMR, waste material parameters and WMC assignment is confirmed by the Permittee.
3.4.r	**Audit A-03-25, Hanford/ Central Characterization Project (CCP)** 1) The AK Summary report does not include sufficient supplemental AK references to support conclusions drawn in the document and to satisfy the requirements;	See response to 3.4.a. The Permittees determined that the AK source documentation compiled by Hanford was sufficient to meet the requirements of the WAP and therefore it would meet the requirements of the revised PMR. The Permittees will continue to require the collection and assessment of available AK information. With respect to the referenced comment, an observation was provided to CCP management which included the need to expand the AK source document references through the collection of supplemental AK.
3.4.s	2) The defense waste determination requires better justification;	CAR 03-081 was issued to document this condition. This issue is pending resolution.
3.4.t	3) Data limitations should be recognized within the AK summary where these limitations impact the use of the AK information;	See response to 3.4.a. The Permittees determined that the identification of data limitations of AK source documents is compliant.
3.4.u	4) As required for other sites, the site should track waste matrix code outliers;	See response to 3.4.a. The current process for assigning the WMC and the confirmation of the code assignment is judged to be compliant. Under the revised PMR, waste material parameters and WMC assignment is confirmed by the Permittee.
3.4.v	5) AK Accuracy determinations for the CCP program are not commensurate with the use of the AK information, and therefore do not adequately track AK accuracy with respect to how the data are being used.	See response to 3.4.a. The Permittees have determined that the CCP AK Accuracy determination procedure and implementation is consistent with the WAP requirements. At this audit, the procedure had been exercised although only one waste container had been through all required confirmatory testing and the data subjected to project level V&V.
3.4.w	**Audit A-04-01, Savannah River Site/CCP**	The Permittees acknowledge that the referenced AK Summary Report contained inconsistent

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	1) There were several errors and inconsistencies in the AK Summary Report, CCP-AK-SRS-4;	information on the expected presence of PCBs and some editorial items such as mislabeled tables in the table of contents only. The AK information compiled was sufficient and compliant. Changes were easily made to correct these minor deficiencies during the audit.
3.4.x	2) Attachment 5, entitled Hazardous Constituents for waste stream SR-W027-221H-HET was not consistent with the Tables in the AK Summary Report regarding PCBs in the waste.	See response to 3.4.w.
3.4.y	**Audit A-04-05, Los Alamos National Laboratory (LANL)/CCP** 1) Additional information should be included in the AK Summary Report to address information that is to be reported in accordance with the WAP, and the reports need refinement to ensure correct interpretation of data presented;	See response to 3.4.a. The Permittees issues a recommendation to improve the clarity of the documents, however, the compiled AK was sufficient and the AK Summaries were compliant with the WAP.
3.4.z	2) The AK Summaries should better address and justify waste stream determinations;	See response to 3.4.a. The AK compiled was sufficient and AK Summaries were compliant with WAP requirements.
3.4.aa	3) Waste Matrix Code assignments should be better justified;	See response to 3.4.a. The AK compiled was sufficient and AK Summaries were compliant with WAP requirements including justification of waste matrix codes. Under the revised PMR, waste material parameters and WMC assignment will be confirmed by the Permittee.
3.4.ab	4) CBFO addressed issues dealing with misidentification of summary waste category groups using RTR, identification of "out of waste stream" items, project level validation/ verification, and Batch Data Reports that are examined for the AK traceability analysis – observers had also identified these issues and concur with the determination.	The Permittees acknowledge that the audit team identified two concerns that resulted in the issuance of a CBFO CAR (CAR 04-021). Both concerns were related to the failure of RTR operations to issue~~s~~ NCRs. The first concern was related to the failure to issue an NCR when lead was found in a drum from a non-hazardous waste stream. The second concern was related to the failure to issue an NCR when the container contents did not match the WMC identified on the RTR data sheet. The Permittees assert that these issues do not represent examples of insufficient or inadequate AK but errors in the confirmation process. Under the revised PMR, waste material parameters will be confirmed by the Permittee.
3.4.ac	**Audit A-04-22, AMWTP** – 1) The Acceptable Knowledge Summary is most useful when it is more of a "stand alone" document than as presented during the audit;	See response to 3.4.i. DOE/WIPP-02-3122, Section A.2.2, requires that AK information, "…will be documented either in the AK summary report for the waste characterization of the waste stream or in another controlled document approved by the Site Project Manager." The AK Summary addresses an auditable trail, existing from summary information to supporting AK source documentation. Clearly, the AK Summary is a significant AK source document, providing applicable references and justifications. Although a "stand alone" AK summary may be preferable, CBFO believes the method used to document this information meets the applicable program requirements.
3.4.ad	2) AK procedure 8.13 still does not require collection of information presented in the AK Summary;	The Permittees note that this issue was raised by the EPA in the draft inspection report for this audit. The Permittees were not aware that this was also an NMED concern. Relevant information on CPR and ferrous/non-ferrous metals is collected during the AK process, confirmed and entered into WWIS. Under the revised PMR this information will still be compiled through AK and confirmed by the Permittees. This is not an example of insufficient or inadequate AK.

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3.4.ae	3) The AK Accuracy Report requires clarification;	The Permittees assert that the AK Accuracy procedure and its implementation at the AMWTP are in compliance with the WAP requirements. The AK accuracy issue identified during this audit dealt with details of the SME review of NDA data and does not appear to be within the scope of this NOD.
3.4.af	3) [sic] How prohibited items (i.e., liquids) are presented in the AK Summary is of question;	The Permittees acknowledge that the AK Summaries for RFTES sludge contained an error regarding the expectation of excess liquid in the drums. This obvious misunderstanding of AK was corrected and verified before the completion of the Audit. This is not an example of insufficient or inadequate AK. The revised PMR will still require the assurance by AK (to include testing as necessary) that there are no prohibited items in the waste stream. Confirmation will be done by the Permittee.
3.4.ag	4) The AK Summaries do not include adequate references to supporting information;	See response to 3.4.a. The AK compiled was sufficient and AK Summaries were compliant with WAP requirements.
3.4.ah	5) Implementation of a better waste tracking system would appear mandatory to ensure that errors in drum tracking, such as those which precipitated in the site-shut down currently underway, are mitigated;	See response to 3.4.a. The container management system is judged to be compliant by the Permittees. This is not an example of insufficient or inadequate AK.
3.4.ai	6) Communication [of data] between generator/storage sites is imperative, particularly since sites such as RFETS are closing and INEEL is beginning to ship waste sourced from closing sites.	The Permittee agree and will continue to require thorough documentation of relevant information and the long term storage and protection of site records, with particular focus upon closure sites such as RFETS.
3.4.aj	**Audit A-05-02, NTS** 1) Additional information is required to ensure that the current S5400 waste stream has been adequately identified;	See response to 3.4.a. The AK compiled was sufficient and AK Summaries were compliant with WAP requirements.-
3.4.ak	2) Multiple drum identifiers could lead to future problems with respect to use of appropriate characterization and shipment of approved wastes	The Permittees agree with the comment. An observation was provided to NTS/CCP management noting that the practice of changing drum numbers when removing prohibited items or repackaging could result in future traceability and/or accountability problems. This is not an example of insufficient or inadequate AK.
3.4.al	3) AK Accuracy is not performed on a regular basis.	See response to 3.4.a. The Permittees acknowledge that an observation was provided to NTS/CCP management for AK procedure CCP-TP-005, Rev 13, as it did not specify a frequency for updating the AK Accuracy reports. These reports should be updated at least annually so compliance with the AK accuracy quality assurance objective from HWFP Attachment B3-4 can be verified during the annual recertification audit. This correction has been made.
3.4.am	The Permittees must identify the source of authority for these proposed changes to the Permittees' obligations under 40 CFR §264.13 and describe how these proposed revisions would work to ensure that no improperly characterized wastes are stored or disposed of at WIPP.	No response is necessary.
3.4.1	**Attachment B, *Introduction and Attachment Highlights*, page B-5, 3rd ¶.** The Permittees propose to remove the	This requirement is in HWFP Attachment B3-11b(3) and has been deleted here to eliminate redundancy. There are several places in the HWFP WAP that contain duplicate requirements.

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	requirements that batch data reports and raw analytical data associated with batch data reports must be submitted to the Permittees upon request for characterization activities. This change does not appear to be related to Section 311. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	The Permittees have attempted to consolidate these to the location where the requirements are described in context. For example, the discussion of the submittal of Batch Data Report and raw analytical data is best described in Section B3-11b(3) which specifies the waste stream analysis package that the generator/storage site may have to produce. The Permittees have made these changes because some of these duplicative requirements apply to the Permittees' confirmation activities. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.4.2	**Attachment B, Section B-1c: *Waste Prohibited at the WIPP Facility*, page B-7, 1st ¶.** The Permittees propose to change the Permittee-level data review requirement for radiographic data records from at least one percent of *all* containers received at WIPP to at least 1 percent of the *radiographed* containers received at WIPP, thereby reducing the number of reviewed containers from one percent of the received containers to roughly 0.1 percent of the received containers. This change does not appear to be related to Section 311. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	The Permittee level waste approval and acceptance processes are in Permit Attachment B7. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.4.3	**Attachment B, Section B-4a(1) , *Data Quality Objectives*, page B-19, 2nd ¶.** The Permittees have proposed to modify the Data Quality Objectives for RTR and VE regarding making a determination that a waste is not ignitable, corrosive, or reactive, and verifying that the waste matches the waste stream description. This change does not appear to be related to Section 311. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	The DQOs for radiography and VE have been modified and move to HWFP Attachment B7. See the revised redline/strikeout version of the permit for the proposed language. The revised, consolidated PMR meets the requirements for approval of a Class 3 PMR set forth in 40 CFR 270.42(c). Permits may be modified "to allow facilities to make technological improvements, comply with new environmental standards, respond to changing waste streams and generally improve waste management practices." 53 Fed.Reg. 37912, 37913 (Sept. 29, 1988). The revised PMR meets the waste analysis requirements set forth in 20.4.1.500 NMAC (incorporating 40 CFR §264.13) and provides the Permittees with the information needed to store and dispose of TRU mixed waste at the WIPP facility. The revised PMR improves the waste management practices by tailoring the required waste analysis to the information needed for the assignment of hazardous waste numbers and to meet the requirements of the TSDF-WAC. By reducing the requirements for sampling and analysis, the revised PMR also furthers the federally mandated goals for the disposal of TRU mixed waste and saves resources and decreases the potential for worker exposure to the radioactive and hazardous waste in the containers. The modifications proposed in the PMR meet the waste analysis requirements of §264.13, are consistent with the requirements of Sections 311/310, are consistent with the waste acceptance criteria in the Permit, and are protective of human health and the environment.
3.4.5	**Attachment B, Section B-4a(2): *Quality Assurance***	The Permittees have proposed representativeness as a QAO for consistency with HWFP

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	***Objectives*, page B-21, 2nd ¶.** The Permittees propose to include "representativeness" as a quality assurance objective because of their proposed reduction of the use of VE and RTR. This change does not appear to be related to Section 311. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	Attachment B3. Representativeness is associated with sampling and with quality control of laboratory analysis. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.4.6	**Attachment B, *Section B-4a(3), Data Generation*, pages B-21 and B-22, 2nd ¶.** The Permittees propose to replace the current permit requirement for audits of the generator/storage sites' waste characterization programs with audits of waste "confirmation" programs. This change does not appear to be related to Section 311. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	The Permittees have retained the requirements for auditing a generator/storage site's waste characterization program.
3.5	***Confirmatory volatile organic compound monitoring program*** As discussed in Section 1.2 above, the Permittees seek to eliminate the requirement to monitor VOC emissions from all active and closed Underground HWDUs, and instead limit monitoring to the open active disposal room and the single closed room adjacent to the active room. These proposed changes were justified by the Permittees' interpretation of the language of Section 311(b), which states: *"Compliance with the disposal room performance standards of the WAP shall be demonstrated exclusively by monitoring airborne volatile organic compounds in underground disposal rooms in which waste has been disposed until panel closure".* The plain language of this subsection does not provide any insight into why the Permittees propose to modify the VOC monitoring requirements in other parts of the permit, including Attachment N and Module IV, which describe the environmental performance standards for the repository and the details for VOC monitoring.	The Permittees' did not eliminate or change the current monitoring of VOCs at Station VOC-A and VOC-B, which monitor VOC emissions from active and closed HWDUs. In response to NMED's comments, the Permittees have revised the PMR to provide for monitoring of rooms in an active panel. Module IV includes conditions related to VOC monitoring, room-based limits, and tracking of headspace gas data generated in accordance with the requirements of the current WAP. Because the PMR proposes to use room-based VOC monitoring in lieu of container-based monitoring, appropriate changes to Module IV are proposed. Changes are also proposed to Permit Attachment N to add room-based VOC monitoring to the existing confirmatory VOC monitoring program in the WIPP underground.
3.5.a	• Performance Standards Module IV and Attachment N describe the VOC monitoring program and requirements currently in the permit. Although Module IV does not specifically	As required by the current HWFP, to demonstrate compliance with 40 CFR §264.601(c), VOCs are monitored at Stations VOC-A and VOC-B in the WIPP underground by measuring trace concentrations of VOCs entrained in the air emissions from all underground hazardous waste disposal units, also referred to as "panels." By proposing to strike the emission rate limits in

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	identify "disposal room performance standards" it does present two important VOC concentration limits that must be met at the WIPP facility: 1) VOC room-based concentration limits, which are the maximum allowable concentrations in a disposal room determined from risk-based calculations, and 2) room-based emission rate limits, which are the maximum allowable mole/room/year VOC emissions. Headspace gas data, which is currently obtained during waste characterization activities, is used to calculate the concentration and emission rate limits on an "as disposed of", real-time basis, thus providing key early warning of potential room-based concentration limit violations. The PMR proposes to eliminate the VOC room-based emission rate limits that are contained in Module IV of the Permit, presumably because other sections of the PMR they are being loaded, by proposing to monitor the open active disposal room and the single closed room adjacent to the active room. The VOC room-based concentration and emission rate limits were established to ensure that health-based limits would not be exceeded. This proposed approach not only raises significant technical and regulatory compliance issues, it conflicts with Section 311(b), which states that *all* disposal rooms in the underground must be monitored until panel closure.	moles/room/year in Table IV.D.1 of Module IV of the HWFP, the Permittees' did not intend to eliminate or change the current monitoring of VOCs at Stations VOC-A and VOC-B. Instead, the Permittees propose to continue to monitor VOC emissions from open and closed underground HWDUs, and to begin monitoring VOC emissions associated with rooms in an active HWDU. The PMR proposes to strike the room based emission rate limits column from Table IV.D.1 because the emission rates in moles/room/year were originally intended to be used along with container-specific headspace gas concentration consistent with the modeling in Appendix D9 to the original 1996 WIPP RCRA permit application to demonstrate compliance with room-based limits. This method of determining potential emissions is not relevant without the accompanying container VOC concentrations. The proposed VOC monitoring program will directly measure VOCs inside disposal rooms. Therefore, because room-based emission rates are no longer relevant, the PMR proposes to eliminate the associated rate limits in Module IV. Both the VOC Confirmatory and Disposal Room VOC Monitoring Programs, as described in the proposed revisions to Permit Attachment N, are "rate sensitive." If concentrations reach specified action levels, the monitoring frequency is increased.
3.5.b	• Technical Issues NMED has identified a number of technical issues of concern associated with the Permittees' proposed disposal room performance standards, including, but not limited to, the following: o Construction design documentation is not provided and other details related to the proposed open-room and closed-room monitoring approaches are incomplete.	These responses to NMED's comments provide additional information about and justification for the proposed room-based VOC monitoring program. The proposed revisions to Permit Module IV and Attachment N also include additional information and details. Construction design documentation is provided in Attachment N.
3.5.c	o In the absence of headspace gas or other VOC waste characterization results, the Permittees	The PMR proposed to use the same analytical method as currently used by the confirmatory VOC monitoring program to monitor for the list of nine VOCs associated with the room-based

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	must justify why a more comprehensive monitoring list was not proposed in the permit modification request. Risk analysis that was performed to support RCRA Subpart X standards resulted in the identification of nine target analytes that must be monitored to ensure compliance, but this risk analysis was predicated on a waste characterization strategy in which headspace gas sampling and analysis results would be available for every disposed container. The headspace gas sampling and analysis is currently performed for 30 compounds as indicated in Table B3-2, with significant tentatively identified compounds (**TICs**) (Section B3-1) also requiring reporting. The Permittees did not provide technical analysis or justification that the VOC monitoring list is adequate in the absence of headspace gas sampling and analysis data.	limits. The Permittees proposed to monitor closed rooms for the nine VOCs with associated room-based limits because they represent approximately 99% of the risk due to air emissions from the HWDUs. As explained in the December 2003 Technical Evaluation Report for WIPP Room-Based VOC Monitoring submitted with the PMR, the thousands of headspace gas measurements made since the 1996 WIPP permit application demonstrate that the nine VOCs chosen for room-based limits are still valid and conservative. With this NOD response, the Permittees propose to use updated analytical methods to analyze samples from the room-based VOC monitoring program. Target analytes for the room-based VOC monitoring program will be measured using standard EPA methods TO-15 or 8260B. Because the room-based VOC monitoring program is designed to measure room VOC concentrations over a wide range (i.e., from the sub-ppmv level to potentially the thousands of ppmv), the laboratory will need the ability to use method 8260B in the unlikely event that room VOC concentrations exceed the low part per million level. The PMR also proposes, in Permit Attachment N, to utilize EPA Method TO-15 for the confirmatory VOC monitoring program.
3.5.d	o Attachment N, Section N-3b, states that the Permittees' proposed analytical method will allow for the investigation and identification of other TICs beyond the nine target analytes referenced above. There is no mention of what, if anything, the Permittees would do if the Permittees detected any other compounds in the room air or how such a detection could affect the quality of the original risk analysis.	The proposed program for room-based VOC monitoring also includes a provision for laboratory reporting of non-target analytes as tentatively identified compounds (TICs). For the confirmatory VOC monitoring programs, TICs detected in 25% or more of the samples for Station VOC A in a running year will be reported to the NMED and added to the target analyte list, unless the Permittees justify their exclusion from the target analyte list. The 1996 WIPP permit application used three basic criteria for evaluating the significance of VOCs – prevalence, concentration, and toxicity. Since VOC TICs are typically detected at trace concentrations, their presence in air samples from the room-based VOC monitoring program is not expected to affect the risk analysis performed for the 1999 WIPP permit. However, in the unlikely event that TICs are detected in 25% or more of the samples, NMED can require the Permittees to revisit the 1999 risk analysis. TICs detected in the confirmatory and room-based VOC monitoring programs as described above will be noted in the WIPP Operating Record and included in the Annual Mine Ventilation Rate Monitoring Report.
3.5.e	o Implementation of the proposed monitoring approach would require abandonment of an open active room if monitoring of a closed room indicated that room-based VOC limits have been exceeded. This could pose serious disruption in the waste management activities including,	It is the Permittees' opinion that the scenario described in this comment is highly unlikely, nonetheless, the PMR proposes certain actions in the unlikely event that VOCs in WIPP disposal rooms were to reach one half of the room-based limits. The room-based VOC monitoring program proposed in the PMR is based on collection of bi-weekly (once every other week) samples of air from all the closed rooms and the active room where waste is being emplaced in

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	but not limited to, delays in waste shipment and closure of a room before design capacity is met. If an active room may require abandonment because the adjacent room exceeded the PMR's proposed disposal standards, continued monitoring or revision of the room closure mechanism must be addressed to ensure that the continued build-up within the closed room does not pose unforeseen threats to human health and the environment.	an active panel. If the results of the bi-weekly monitoring show that one or more of the nine VOC constituents of concern in any of the closed rooms in an active panel has reached a concentration of one half the room-based limit, the sampling frequency for such ≥ 50% room(s) will be increased to once per week. If any closed room in an active panel reaches 50% of the RBL, NMED will be notified. The once per week closed room sampling frequency would continue either until the concentrations in the closed room(s) fall below 50% of the room-based limits, or until the closure of Room 1 of the panel, whichever occurs first.
3.5.f	o The Permittees provided a report (WRES, 2003) that they believed justified the technical approach to VOC monitoring proposed in the PMR. In this report, the Permittees compare the head space gas VOC concentrations in a 1995 data set of 930 drums to a new data set composed of the 1995 data set, WWIS data from March 1999 to May 2003, head space gas data from drums from a hydrogen-getters poisoning study, and head space gas data from 103 drums of waste at INEEL that were analyzed for shipment to WIPP. The author's comparison of the two data sets indicated that the new data set had lower average headspace gas VOC concentrations, from which the author concluded that VOC concentrations in WIPP waste will be lower than previously projected. It is unclear, however, whether these data are truly representative of wastes currently emplaced or intended for future emplacement at WIPP. Technical questions raised during NMED's review of this report include, but are not limited to, the following: - A reference in the WRES report (McCulla and Van Soest, 2003, Section 3.1, last paragraph) indicates that analytical data were eliminated from the supporting data sets if the corresponding blanks were contaminated. This practice needs full technical justification to document that this approach did not eliminate VOCs that should have been considered.	The paper by McCulla and Van Soest of LANL, which was referenced by the WRES Technical Evaluation Report for WIPP Room-Based VOC Monitoring, analyzed data collected at the time, using the criteria, at the time of the analysis, required for waste to be acceptable to WIPP. The original 1995 analysis did not take into account the WIPP WAC and included drums whose headspace gas concentrations exceeded lower flammability limits. In the Permittees' view, it would be inappropriate to judge the impact on the repository of wastes not acceptable for disposal in the repository. The use of a consistent methodology for handling the data was considered desirable to compare the data sets generated at differing times. The 1995 data set as originally generated had no acceptance criteria. The application of the waste acceptance criteria in effect at the time of publication of the McCulla and Van Soest paper had a significant impact on the number of drums included in the analysis (14% were excluded). It is true that these data were eliminated, due to criteria that were established prior to conducting the analysis. The methodology used in the paper was to treat the multiple data sets similarly and apply the WIPP WAC present at the time of the analysis. With respect to whether these data are truly representative of wastes currently emplaced or intended for future emplacement at WIPP, as was explained in the paper, the solidified organics from RFETS (which include many drums also shipped to INEEL) are believed to be a bounding case of all solidified organics generated in the DOE complex, past, present or future. This is because the OASIS process that generated these wastes was at the process limits of a waste form that does not contain free liquids. Higher concentrations of VOCs would result in free liquids and hence the drums would not meet WIPP's WAC. Acceptable knowledge from other generator sites showed that none of the other solidified organic sludges in the complex (current and projected) are even close to the levels of VOCs found in the RFETS OASIS process. Additional technical justification of the calculations performed by McCulla and Van Soest is not necessary at this time because the action levels proposed in the PMR are a function of room concentration of VOCs, and are independent of the concentration of the VOCs in the waste inventory. The proposed room action levels, as clarified in this NOD response, are intended to work for all circumstances, regardless of the concentration of the VOCs in the waste (i.e., for those rooms with low-VOC content waste and those with high-VOC content).

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3.5.g	- The report states in Section 3.1.2 that solidified organics from INEEL and RFETS represent an upper bound on headspace gas concentrations from VOCs. This claim is not supportable because other sites (e.g., LANL and Hanford) may also generate solidified organics.	The Oil and Solvent Immobilization System (OASIS) process at RFETS came from their Pu machining operations. While it is true that other sites may generate solidified organics (and plan to, based on inventory projections) the waste streams from these other sites do not have the potential to contain the amount of VOCs seen in the RFETS waste stream for the following reasons. 1) RFETS machining was concerned with throughput, not waste generation. Other sites did not have the throughput requirements of RFETS. 2) No other site has the volume of Pu machining that was required of RFETS. 3) Those sites that do machine Pu do so with waste minimization strategies that include less machining per item and less VOCs per machining operation.
3.5.h	- In the fourth paragraph of Section 3.1.3, the author states "…the room-based limit can not be reached even if all the problem VOC waste from solidified organics were to be emplaced in a single room (*Ref #9-Statistical Analysis of VOC Levels in the TRU Waste Inventory).*" Review of reference #9 (page 16) does not indicate that a quantitative evaluation was carried out to substantiate this assertion. If such an evaluation has been performed, information regarding the methods and results of this investigation must be provided	NMED's comment pertains to the September 4, 2003 TER, and not the revised TER that was submitted with the PMR. The TER was revised on December 1, 2003 in response to a similar comment NMED made in a November 7, 2003 letter to the National Academy of Sciences. The revised TER was submitted to NMED with the PMR on January 9, 2004, and it <u>did</u> <u>not</u> make the claim that the room-based limits can not be reached even if all the problem VOC waste were to be emplaced into a single room. Rather, the revised TER simply stated that, based on what is known about the TRU waste inventory, it appears that there isn't enough high-VOC content waste to fill a room. The PMR proposes action levels for room-based VOC monitoring that apply independent of the VOC content of the waste inventory actually emplaced in the room, and this NOD response further clarifies those action levels. For these reasons, it is not necessary to perform a quantitative evaluation to prove that all high VOC waste could be emplaced into a single room without exceeding the room-based limits. The original claim made in the September, 2003 TER was based on an un-published preliminary calculation by B. McCulla and Van Soest of LANL. The LANL calculation considered emplacement of all the solidified organics (assumed 7700 drum equivalents with 14100 ppmv carbon tetrachloride) as well as the next highest average VOC-containing waste form, Combustibles (3871 drums, containing 61 ppmv carbon tetrachloride) and put them in a single room containing a total of 11571 drums. The model then looked at diffusion out of the drums as a function of time. Based on the calculation, the highest room based average was 9403 ppmv carbon tetrachloride.
3.5.i	- Section 4.3 describes the proposed action levels for the closed-room monitoring system. Although monitoring results obtained in Room 7 of Panel 1 were used to establish action levels and response time, no information was provided to demonstrate that the waste in this room adequately represents all wastes that will be placed in WIPP. An analysis should be performed to demonstrate that these action levels and response times	The proposed room action levels, as clarified in this NOD response, are intended to apply to all circumstances, regardless of the concentration of the VOCs in the waste (i.e., both for those rooms with low-VOC content waste and those with high-VOC content). An analysis as suggested by the NOD is not necessary, because: • The proposed room-based monitoring program, as clarified by this NOD response, will collect samples from all closed rooms in an active panel. By sampling rooms on a bi-

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	will be adequate under all possible circumstances (e.g., in a room with a greater percentage of high-VOC wastes). The PMR removes all reporting requirements pertinent to the WWIS without providing equivalent alternative reporting for the proposed monitoring	weekly basis, the program will be able to monitor the build up of VOCs in all rooms. • The Panel 1, Room 7 experience demonstrates the ability to monitor for VOCs in closed rooms, and also demonstrates a correlation between container headspace VOC concentrations and measured room VOC concentrations. • The Panel 1, Room 7 experience conservatively measured low VOC concentrations (ppbv levels), and therefore the proposed monitoring program will be able to measure high VOC concentrations (ppmv levels of the room-based limits). • The action levels for the room-based monitoring are tiered, as shown in the attached flow chart, to provide for increased frequency of sampling when room VOC concentrations reach 50% of the room-based limits. The tiered action levels and three- and five-day response times provide a mechanism to track build up of VOCs in rooms, and to provide sufficient warning if VOC levels approach the room-based limits. • The twice weekly Station VOC-A monitoring will serve as a backup to the proposed room-based VOC monitoring program. The proposed room-based VOC monitoring program is conservative, protective of human health and the environment, and adequately satisfies NMED's concerns. Accordingly, an analysis as suggested in the NOD is unnecessary. The Permittees are not proposing to utilize the WWIS system for reporting the results of room-based VOC monitoring. Instead, the Annual Mine Ventilation Rate Monitoring Report will provide results of the confirmatory and room-based VOC monitoring.
3.5.j	• Compliance with RCRA The Permittees' proposed VOC monitoring plan significantly reduces the level of monitoring in the HWDUs based on headspace gas data and prevents the Permittees or NMED from assessing whether the waste containers are being disposed of in a manner that will be protective of human health and the environment, consistent with 40 CFR §264 Subpart X.	Permittees' PMR increases the amount of VOC monitoring performed in the WIPP underground. Moreover, Permittees' proposed approach to room-based VOC monitoring will provide for a more direct method of determining the emissions of VOCs from disposed containers. This more direct method will allow either NMED or the Permittees' to verify that the waste containers are being disposed in a manner that will be protective of human health and the environment, consistent with 40 CFR §264, Subpart X.
3.5.k	40 CFR §264.17(b) identifies a series of precautions for the disposal of ignitable and reactive wastes; and the mixing of incompatible wastes that include: o Preventing the production of uncontrolled	Compliance with 40 CFR Section 264.17(c) was addressed in the 1996 permit application and by the NMED in the 1999 permit proceeding. Compliance is achieved in two ways. First, the VOC monitoring system has associated room-based levels that preclude explosive conditions in rooms in active waste panels. Second, panel closures have been designed to mitigate any effects

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	flammable fumes or gases of sufficient quantities to pose a risk of fire or explosion	of flammable mixtures that may occur in closed panels. The revised PMR does not change any of these bases.
3.5.l	o Preventing damage to the structural integrity of the facility	See Response to Comment 3.5.k.
3.5.m	40 CFR §264.17(c) indicates that compliance must be documented based on references to scientific literature, trial tests, or waste analyses. Elimination of the waste analysis option for preemptively knowing the gaseous/chemical content of wastes through actual sampling appears to severely limit the options available to the Permittees to ensure that the above precautions are addressed. For example, without the availability of headspace gas data, it is unclear how the Permittees will ensure that the VOCs in the closed rooms will be under explosive limits as specified in §264.17 (b)(3). The Technical Evaluation Report for Room-Based VOC Monitoring (WRES, 2003), which was provided by the Permittees in an attempt to support applicability of the 95% action level as an equivalent method to monitor on-going VOC emission rates, does not completely address NMED's concerns.	See Response to Comment 3.5.k.
3.5.1	• **Specific Citations** NMED has identified the following PMR-specific comments: **Module IV, *Section IV.D.1, Room-Based Limits,* page IV-5, Table IV.D.1** The Permittees propose to eliminate VOC room-based emission rate limits from Table IV.D.1, but applicability of this change with respect to Section 311(b) is of question. The Permittees must identify the source of authority for this proposed change or delete this proposed revision.	The PMR proposes to strike the room based emission rate limits column from Table IV.D.1 because the emission rates in moles/room/year were originally intended to be used along with container-specific headspace gas concentration. This approach was consistent with the modeling in Appendix D9 to the original 1996 WIPP RCRA permit application to demonstrate compliance with room-based limits. This method of determining potential emissions is not relevant without the accompanying container VOC concentrations. The proposed VOC monitoring program will directly measure VOCs inside disposal rooms. Therefore, because room-based emission rates are no longer relevant, the PMR proposes to eliminate the associated rate limits in Module IV. Both the VOC Confirmatory and Disposal Room VOC Monitoring Programs, as described in the proposed revisions to Permit Attachment N, are "rate sensitive." If concentrations reach specified action levels, the monitoring frequency is increased. Section 311(b) of Pub. L 108-137 and Section 310(b) of Pub. L. 108-447 support the revisions proposed in the revised PMR.
3.5.2	**Module IV- *Section IV.F.2.g, Notification Requirements for Disposal Room Monitoring,* page IV-10, 5th ¶.** The Permittees propose to notify the Secretary within five (5) working days of obtaining validated analytical results that indicate any VOC concentrations have exceeded the room based VOC concentration limits found in Table IV.F.2.g.	Text for proposed revisions to Permit Attachment N has been revised to clarify the timeframes associated with turnaround of analytical reports, to ensure that NMED will be notified in a timely manner if any disposal room in an active panel reaches 50% of the room-based limit.

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	However, allowable sample/ analytical report and analytical report/validation turnaround times are not addressed. Revise the PMR to indicate time frames for all data submittals to ensure that the Secretary is made aware of any elevated concentrations in a timely manner.	
3.5.3	**Module IV- Table IV.F.2.g, *Notification Requirements for Disposal Room Monitoring*, page IV-10, 5th ¶**. The Permittees provided VOC Room Action Level concentrations in Table IV.F.2.g that are 95% of the VOC room based limits found in Table IV.D.1, and imply that the report entitled *Technical Evaluation Report for WIPP Room-Based VOC Monitoring* addressed this decision. However, technical viability of the 95% Room Action Level requires additional explanation, as the rate at which the VOC room concentration increases will be influenced by factors such as the VOC concentrations of the most recently emplaced drums, amount of gas generated within the containers based on the waste material parameters, the percentage of the room that is filled, and the location of the VOC room monitor in relation to populations of high VOC concentration drums. These issues must be addressed to ensure that the proposed 95% value is appropriate.	The PMR proposed a bi-weekly sampling frequency for disposal rooms based on the experience from actual measurements of VOCs in closed disposal rooms in Panel 1. Data obtained from closed room VOC monitoring demonstrate the following: 1) VOCs build up very slowly in closed rooms, 2) measured VOC levels in the rooms correlate with measured levels of VOCs in headspace of containers, and 3) the levels that VOCs build up to in closed rooms (ppbv) are typically orders of magnitude less than the levels measured in drums (ppmv). Additionally, headspace gas data reported for approximately 75,000 containers has provided important information about VOCs in TRU waste. First, the average amount of VOCs in the containers at WIPP is significantly less than estimated in the 1996 WIPP permit application. Second, the estimated averages, and the actual averages are well below the room-based VOC limits for the nine VOCs identified as constituents of concern in WIPP's permit (i.e., those nine VOCs representing 99% of the risk). Action levels for the room-based VOC monitoring program, as proposed in the PMR, are modeled after those in the current confirmatory VOC monitoring program. Setting the action levels for the closed room immediately adjacent to the active room at 95% of the room-based limits is appropriate. NMED's comment suggests that the gas generating potential of TRU waste, as a function of waste material parameters, could increase the rate at which VOCs build up in disposal rooms. However, as discussed in the 1996 Permit application, the gas generating potential of TRU waste is not sufficient to generate large amounts of gases in a short period of time to affect room VOC levels in any significant way. The Miscellaneous Unit Modeling included in WIPP's 1996 Permit application evaluated the gas generation potential of waste material parameters (i.e., the amount of cellulosics, plastics, rubber, and metal contained in the waste) to determine the significance of gas (e.g., hydrogen and carbon dioxide) that could be generated over the operations, closure, and post-closure period of WIPP as a result of biological decay and corrosion. The analysis showed that the amount of cellulosics, plastics, rubber, and metals in drums of waste in a disposal room will not have a measurable affect on the amount of VOCs emitted from the room during the relatively brief period that a given disposal panel is open (typically 18 to 24 months). Additionally, the percentage of room capacity actually filled with waste does not have a material impact on the rate that VOCs will build up behind closed rooms. The Panel 1 closed room monitoring experience included a room that was filled to capacity – VOCs built up very slowly, and only to a very small fraction of the amount measured in the headspace gas of the drums in

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		the room. The disposal room sampling proposed in the PMR is designed to collect VOCs from multiple points in closed rooms. Because of the way the disposal panels are constructed, there are only two ways that VOCs can leave a closed room – either through what was previously the air intake side of the room, or through what was previously the air exhaust side of the room. The sampling apparatus collects samples from the former intake and the former exhaust of each closed room. Moreover, at each of these distinct locations in a closed room, the sampling apparatus collects sample from three vertical levels in the room – near the ceiling, in the center, and near the floor. Based on foundational scientific principles that control the occurrence of VOCs in air, including diffusion and equilibrium, the proposed sampling approach will measure VOCs regardless of the exact location of containers in the waste stack in the closed room. In addition to the 95% action level for the closed room immediately adjacent to the active room, the PMR proposes an action level of 50% of the room-based limits that would apply to any closed room in an active panel. Based on the foregoing, the action levels proposed for room-based monitoring in the WIPP underground are reasonable, protective and appropriate.
3.5.4	**Module IV- Section IV.F.2.h, *Remedial Action for Disposal Room Monitoring*, page IV-11, 1st ¶.** The Permittees propose to obtain a second confirmatory air sample in the event the concentration of any monitoring compound exceeds the applicable action level concentration. The Permittees did not, however, indicate the time frame between collection of the first sample and the second confirmatory sample. Ideally, the second sample should be collected as soon as practicable to prevent room concentration limits from exceeding the VOC room based limit. The Permittees must revise the PMR to indicate the allowable time frame between the first sample and a second confirmatory sample and indicate how this time frame will prevent exceedance of VOC room limits.	The Revised Technical Evaluation Report for WIPP Room-Based VOC Monitoring and the proposed revisions to Permit Attachment N now include provisions for the timeframes for collection and analysis of confirmatory samples.
3.5.8	**Attachment B, *Section B-1c, Prohibited Wastes at the WIPP Facility*, page B-7 7th ¶.** The Permittees propose to delete text stating that room based emission rates will be obtained from headspace gas data. See 3.5.1 above.	The Permittees are not proposing to utilize the WWIS system for reporting the results of room-based VOC monitoring. Instead, the Annual Mine Ventilation Rate Monitoring Report will provide results of the confirmatory and room-based VOC monitoring.
3.5.9	**Attachment N, *Section N-3d(2), Sampling Schedule for Disposal Room VOC Monitoring*, page N-6, 6th ¶.** The proposed disposal room air monitoring sample frequencies of	The empirical evidence obtained from closed room VOC monitoring in Panel 1 reveals three fundamental facts regarding the behavior of VOCs in closed disposal rooms: 1) VOCs build up very slowly in closed rooms (on the order of months), 2) measured VOC levels in the rooms are

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	once every two weeks or weekly once the concentration of any one constituent reaches 50% or more of the documented action level were not technically justified or supported by the Permittees. Revise the PMR to better justify this determination.	highly correlated with measured levels of VOCs in headspace of containers, and 3) the levels that VOCs build up to in closed rooms (ppbv) are typically three orders of magnitude less than the levels measured in drums (ppmv). =The bi-weekly frequency is conservative and appropriate for the room-based monitoring. Another consideration that reinforces this conclusion is the fact that Station A VOC monitoring will still be occurring in conjunction with the room-based monitoring. Station A samples are collected twice each week. If, VOC concentrations in closed rooms were to unexpectedly increase to near the room based limits in a two week period, Station A would measure additional VOCs in the exhaust drift.
3.5.10	**Attachment N, Section N-3e(2), Data Evaluation and Reporting for Disposal Room VOC Monitoring, page N-8, 5th ¶.** The Permittees propose to use validated data to determine whether the VOC concentrations in the closed disposal room adjacent to the active disposal room have exceeded action levels. However, the Permittees must address whether the current requirements in the Permit, based upon availability of headspace gas data, must be improved upon because the reliability of the disposal room monitoring sampling and analysis becomes far more critical in ensuring that room disposal limits are not exceeded. For example, the current requirement for internal standard accuracy is ± 40%. A low internal standard bias for samples slightly below the action level would present a strong likelihood that the actual room concentration may exceed the action levels. Also, because of the now more critical nature of the monitoring sample, the completeness percentage should be revised to ensure a much higher value. Revise the PMR to address these concerns pertaining to reevaluation of the data evaluation criteria.	Internal standard recoveries are used for determining the functionality of the mass spectrometer, not the quantitative accuracy of sample results. If internal standard responses for the mass spectrometer drift beyond the criteria levels, it indicates that the instrument is not fully functional and/or that the calibration must be rerun. Quantitative accuracy is judged according to percent recoveries of Laboratory Control Samples (LCSs) and Laboratory Control Sample Duplicates (LCSDs). For EPA Method TO-14A, the required accuracy for LCSs is 40%. The Permittees are proposing to use EPA Method TO-15, which has more stringent requirements. NMED's concern that the internal standard response variations would lead to a low bias if closed-room VOC levels approached the action levels is incorrect. The stated action levels are in thousands of ppmv, not ppbv. If a sample were submitted for analysis which contained more than 200 ppbv (0.2 ppmv), it would require sample dilution or analysis by a method other than TO-14A or TO-15. In this case, it would require analysis under the headspace gas methods (e.g., EPA Method 8260B modified, and Method 8015B modified), which are designed for analysis of samples at the ppmv level. The accuracy criteria are more stringent under these methods. It is not possible or reasonable to expect the same accuracy criteria which apply for samples analyzed at ppmv to apply to samples analyzed at ppbv, and this is recognized in the criteria set forth in the various EPA methods. Accordingly, the Permittees propose that the room-based VOC monitoring program have the ability to select the appropriate analytical method to match the circumstances that may be encountered in WIPP disposal rooms. . NMED's NOD requests that laboratory method completeness percentages described in the PMR be revised.[1] The completeness percentage achieved by the Carlsbad Environmental Monitoring and Research Center (CEMRC), the laboratory that analyzes WIPP room-based monitoring samples, is routinely 95% or more. Samples, from the analytical perspective, are counted as complete if they are analyzed successfully. The Permittees have revised proposed Permit Attachment N to reflect an analytical completeness percentage of 95%.

[1] *Ibid*, pg. 39, "Also, because of the now more critical nature of the monitoring sample, the completeness percentage should be revised to ensure a much higher value"

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3.6	***Additional Concerns Regarding Proposed Permit Modifications*** The Permittees include numerous additional revisions in the PMR that do not appear to be related to Section 311. These proposed revisions include, but are not limited to, the following: • Removal of operational variance reporting requirements from *Module II - General Facility Conditions, Quality Assurance Objectives*, II.C.1.d (page II-3);	The requirement operational variance reporting from *Module II - General Facility Conditions, Quality Assurance Objectives*, II.C.1.d as been restored.
3.6.a	• Elimination of waste matrix code assignments;	The use of Waste Matrix Codes to provide physical and chemical information about a waste stream has been restored in the revised PMR.
3.6.b	• Removal of the requirements pertaining to Summary Waste Category Groups (**SWCGs**) (e.g. last ¶ on page B-2);	The requirement to initially categorize TRU mixed waste into Summary Category Groups has been restored in the revised PMR.
3.6.c	• Removal of the requirement that a waste stream be comprised of 50% of the assigned SWCG;	The original language for assigning a waste stream to a SWCG has been restored in the revised PMR.
3.6.d	• Allowance for shipping waste prior to full review and approval by the Permittees (page B-5, B-7).	As an important part of the Permittees' waste analysis activities, the Permittees will review the WSPF to ensure that there are no ignitable corrosive, or reactive wastes and that only wastes assigned hazardous waste numbers allowed by the WIPP HWFP are shipped. Waste will not be placed into permitted storage or disposal areas at WIPP until the Permittees' waste analysis activities, as described in HWFP Attachment B7, are completed.
3.6.e	• Inclusion of "additional sampling" without adequate explanation (page B-6).	The Permittees are proposing the, if AK is sufficient, the Permittees will submit the Waste Analysis Information Summary (which includes the AK Summary Report) to the NMED for review and approval. With NMED's approval of the Waste Analysis Information Summary, the Permittees will approve the waste stream. If the AK is insufficient to demonstrate proper generator/storage site waste analysis, additional waste analysis may be obtained by HSGSA, SSA, VE, or radiography.
3.6.f	• Removal of the miscertification rate calculation.	The selection of containers for performing VE is deleted. Instead, the Permittees perform this radiography as an available method in the Permittees waste analysis of each waste stream in each shipment (or the Permittees may obtain the necessary waste analysis information using VE or an examination of VE records). The revised PMR provides selection criteria for the Permittees for performing this waste examination and specifies related QC measures, including data validation, in new HWFP Attachment B7, and requires the Permittees to use the random selection of a subpopulation of the containers for waste examination. See the revised redline/strikeout version of the permit for the proposed language.

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		See Response to Comment 3.1.1 (second and third paragraphs).
3.6.g	• Modification of RTR/VE processes (e.g., on-the-job training).	The method requirements for radiography and VE have moved to HWFP Attachment B7. Operator qualifications for the Permittees' radiographers and VE experts have been included in the HWFP training plan (Attachments H, H1, and H2).
3.6.h	• Revision of data generation/reporting requirements in *Attachment B3, Quality Assurance Objectives and Data Validation Techniques for Waste Characterization Confirmation Methods*.	The Permittees have made numerous changes to Section B3 in order to accommodate waste analysis activities performed by the Permittees as required by Section 311 of Pub. L. 108-137 and Section 310 of Pub. L. 108-447. These changes are discussed in a separate Table of Changes as well as in previous responses to NOD comments.
3.6.1	The Permittees must identify the source of authority for the following proposed changes or delete them: **Attachment B1, *Section B1-1b Quality Control*, page B1-24.** The PMR proposes to change the RTR training requirements by deleting the requirement for training to identify "waste material parameters expected to be found in each Waste Matrix Code Group" and specifying only training to site-specific waste material parameters. This change could limit the radiographer's ability to compare a container's contents with the waste stream description. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.6.2	**Attachment B1, *Section B1-1b(1), Formal Training*, page B1-25.** The PMR proposes to change the RTR training requirements by deleting the requirement for training to "waste material parameters expected to be found in each Waste Matrix Code Group" and specifying only training to site-specific waste material parameters. This change could limit the radiographer's ability to compare a container's contents with the waste stream description. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.6.3	**Attachment B1, *Section B1-1b(2), On-the Job Training*, page B1-25.** The PMR proposes to change the training requirement for identifying prohibited items to include only identification of liquids and compressed gasses, without adequate justification. Operators must be capable of identifying all prohibited items in the waste. Additionally, the PMR indicates that the RTR process must confirm that the waste is not reactive, explosive, or corrosive. The Permittees have failed to adequately link the specific parameter or parameters in waste that would allow identification of ignitable, reactive and corrosive wastes by	The method requirements for radiography and VE have moved to HWFP Attachment B7. Operator qualifications for the Permittees' radiographers and VE experts have been included in the HWFP training plan (Attachments H, H1, and H2). See the revised redline/strikeout version of the Permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).

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	x-ray examination in many cases. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	
3.6.4	**Attachment B1, *Section B1-2, Visual Examination*, page B1-27.** The PMR proposes to remove the requirement that video/audio tapes must be unalterable. Digital media is alterable and should not be used to document RTR/VE characterization results. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions	This change has been retained since the use of digital video recording is commonplace and provides reliable method for recording information. The change is necessitated because the Permittees will rely on the review of VE records, including VE video records to perform waste examination as part of the waste analysis activities performed by the Permittees for some waste streams. The Permittees are expanding the use of media to assure that the latest technologies are available to meet the waste analysis requirements. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.6.5	**Attachment B1, *Section B1-2b(2), On-the Job Training*, pages B1-28 and B1-29.** The Permittees propose to change the training requirement for identifying prohibited items to include only the identification of liquids and compressed gasses. Operators must be capable of identifying all prohibited items in the waste. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The method requirements for radiography and VE have moved to HWFP Attachment B7. Operator qualifications for the Permittees' radiographers and VE experts have been included in the HWFP training plan (Attachments H, H1, and H2). See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.6.6	**Attachment B3, *Section B3-1 Validation Methods* (all).** The PMR proposes definitional related to precision, accuracy, representativeness, comparability, and completeness that do not appear to be related to the language in Section 311. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The text referred to in this comment has been restored in the revised PMR with one exception. The paragraph dealing with non-conformances has been moved to HWFP Attachment B3-12, *Nonconformances*.
3.6.7	**Attachment B3, *Section B3-4 Precision*, page B3-12.** The PMR proposes to revise the QAO for precision of RTR by eliminating the statement "the precision of radiography is verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern." This proposed wording reduces the precision requirements for RTR. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The QAOs for Radiography have been moved to HWFP Attachment B7-3e(1). The statement regarding tuning the image is an accuracy measure and not precision. It has been moved to the Accuracy QAO.
3.6.8	**Attachment B3, *Section B3-4 Accuracy*, pages B3-12 and B3-13.** The PMR proposes a wording change that would eliminate the requirements for the Site Project QA Officer to calculate a miscertification rate for waste matrix codes, or to identify the rate at which containers are found to contain prohibited items during VE comparison with RTR. The	The determination of the miscertification rate is deleted. Instead, the Permittees perform this radiography in waste examination as part of the Permittees waste analysis of each waste stream in each shipment (or the Permittees may examine waste using VE or an examination of VE records). See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).

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	Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	
3.6.9	**Attachment B3, *Section B3-4, Waste Material Parameter Estimation*, page B3-21.** The Permittees propose to use waste stream ratios developed on a waste-stream-wide basis to estimating weights or volumes of each waste material parameter in individual containers. The term "waste stream ratio", however, was not completely defined and specific requirements as to how these ratios are to be developed were not included. NMED is concerned that basing individual container contents on waste-stream-wide averages may not provide sufficient accuracy. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.6.10	**Attachment B3, *Section B3-6 Data Review, Validation, and Verification Requirements*, pages B3-23 and B3-24.** The PMR proposes to remove a number of paragraphs pertaining to data review, validation, and verification, presumably based on the assumption there will be no cases where these batch data reports could be needed. This assumption does not appear to be justified by the Section 311 language, and the basis for this assumption has been questioned in numerous comments made both by the public and in this NOD. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	Section B3-9 of the revised PMR restores data review, validation, and verification requirements, and modifies them to accommodate waste analysis performed by the Permittees. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.6.11	**Attachment B3, *Section B3-6a, Data Generation Level*, page B3-25, Bulleted List.** The proposed deletions to this list of the minimum requirements for raw data collection and management do not appear to be related to Section 311. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions	Section B3-9a of the revised PMR restores data generation level activities and modifies them to accommodate waste analysis activities by the Permittees. Specifically, reviews by technical supervisors and a QA representative are assigned to the Site Project Manager to eliminate redundancy. Section 311 of Pub. L. 108-137 and Section 310 of Pub. L. 108-447 support the revisions proposed in the revised PMR.
3.6.12	**Attachment B3, Section *B3-6b(2), Site Project Manager*, page B3-30, Bullet 5.** The Permittees propose to replace "QAO" with "DQO" in this portion of the proposed PMR, without providing the rationale for the change. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	QAO has been restored and the associated section reference, which is incorrect, has been corrected. See the redline/strikeout version of the permit for the proposed language.
3.6.13	**Attachment B3, Section B3-6b(3), *Prepare Site Project QA Officer Summary and Data Validation Summary*, pages B3-30 and B3-31.** The Permittees propose to delete the	Section B3-9b(2) of the revised PMR restores these activities and assigns them to the Site Project Manager. See the revised redline/strikeout version of the permit for the proposed language.

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	current process for eliminating samples based upon the presumption that no data will be collected that requires validation summarization. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	See Response to Comment 3.1.1 (second and third paragraphs).
3.6.14	**Attachment B3, *Section B3-7a, Reconciliation at the Project Level,* page B3-32.** The PMR proposes to eliminate the current requirement that evaluation of statistically driven decisions as well as the completeness rate of characterization activities will be verified by the Site Project Manager. The PMR also proposes to delete several reconciliation elements in addition to those directly related to characterization including: • Determination of the waste matrix code	Section B3-10a of the revised PMR restores this requirement.
3.6.14.a	• Determination that the waste contains TRU radioactive waste	Section B3-10a of the revised PMR restores this requirement.
3.6.14.b	• Determination of the hazardous/non-hazardous status of the waste	Section B3-10a of the revised PMR restores this requirement.
3.6.14.c	• Determination of potential flammability of the waste	Section B3-10a of the revised PMR restores this requirement.
3.6.14.d	NMED believes that the above elements are required to be known as part of the overall waste management strategy in the Permit. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	No response required.
3.6.15	**Attachment B3, Table B3-11, *Testing Batch Data Report Contents*, pages B3-59 through B3-61.** The PMR proposes to remove several testing batch data report elements that NMED believes to be critical elements of RTR/VE results, including: • Indication of sealed containers >4L	The Method Requirements for Radiography and VE have been moved to HWFP Attachment B7 in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).
3.6.15.a	• Documentation of free liquid quantities in waste containers	The Method Requirements for Radiography and VE have been moved to HWFP Attachment B7 in the revised PMR.
3.6.15.b	• Container gross weight and empty weight	This information is related to transportation and is not needed for the Permittees' waste analysis.
3.6.15.c	• Limit documentation of prohibited items to liquids and compressed gases	The Method Requirements for Radiography and VE have been moved to HWFP Attachment B7 in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).

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3.6.15.d	• Scale calibration QC check	This information is not needed for confirmation since material parameter weights are proposed to be estimated through AK.
3.6.15.e	In addition, the Permittees did not include requirements that the testing batch report must include information as to whether the container contained corrosive, explosive, or reactive wastes. Further, AK may or may not identify all of the required prohibited items; for example, sites often state that the presence of liquid is "possible" based on AK, but a definitive "yes or no" is not provided. The Permittees must identify the source of authority for these proposed changes or delete these proposed revisions.	The Method Requirements for Radiography and VE have been moved to HWFP Attachment B7 in the revised PMR. The Permit section referred to in this comment has been revised to reflect the approach proposed in the revised PMR. See the revised redline/strikeout version of the permit for the proposed language. See Response to Comment 3.1.1 (second and third paragraphs).