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November 5, 1999

Dr. Ines Triay, Manager
Carlsbad Area Office
Department of Energy
P. O. Box 3090
Carlsbad, New Mexico 88221

*See corrected copy
11/10/99*

Dear Dr. Triay:

RE: RFETS Waste Determination for RF005.01 - Final Review

The New Mexico Environment Department (NMED) has completed its final review of the document entitled "Non-Mixed Waste Determination for TRU Stabilized Pyrochemical Salts - Profile No. RF005.01, Revision 2.1" dated September 1999. Attached are NMED's comments concerning: 1) the general completeness of the information provided for review; 2) the technical basis for DOE's non-mixed waste determination; and 3) our evaluation of RFETS' compliance with the WIPP Waste Analysis Plan.

NMED is providing this review to document our technical issues with RF005.01, and is not requesting a response. If you have any questions, please contact Mr. Steve Zappe of my staff at (505) 827-1560, x1013.

Sincerely,

James P. Bearzi
Chief
Hazardous and Radioactive Materials Bureau

Attachment

- cc: Greg Lewis, NMED
Debby Brinkerhoff, HRMB
Steve Zappe, HRMB
Susan McMichael, NMED OGC
David Neleigh, EPA Region 6
Mary Kruger, EPA ORIA
Connie Walker, TechLaw
WIPP File - Red '99



ATTACHMENT 1

Review of "Non-Mixed Waste Determination for TRU Stabilized Pyrochemical Salts - Profile No. RF005.01", September 1999 (Revision 2.1)

A. General Completeness Analysis

The Rocky Flats Environmental Technology Site (RFETS) document entitled "Non-Mixed Determination for TRU Stabilized Pyrochemical Salts-Profile No. RF005.01, Revision 2.1, September 9, 1999 (Stabilized Pyrochemical Salts Document, Rev.2.1) was examined to determine whether all of the necessary referenced material was included in the supplemental information package and Responses to Comments (Rev. 0) . Most of the information referenced within the Stabilized Pyrochemical Salts Document, Rev.2.1 was included in the information package submitted with Revision 0 of the Document or were provided with Responses to Comments on Rev. 0. However, the following information should have been provided to facilitate a complete technical review of the Stabilized Pyrochemical Salts Document, Rev.2.1:

- "Statistical Solid Analysis Data Evaluation Report for Stabilized Pyrochemical Salts Lot 3 (IDC 433X, Profile RF005.01) - TRG-040-99, August 31, 1999" (New Reference No. 18) .
- "Statistical Solid Analysis Data Evaluation Report for Stabilized Pyrochemical Salts Lot 2 (IDC 411X, Profile RF005.01) - TRG-032-99, July 12, 1999" (New Reference 16) .
- Results and supporting documentation for the total metals analyses conducted on eight cans of IDC 411X waste. The data would have been used to conduct an independent verification of the results of the statistical manipulation of the data and conclusions that the concentrations of total metals in the waste are below the regulatory threshold limit (RTL) provided in Appendix C of the Pyrochemical Salts Waste Document, Rev.2.1. The total metals analyses data for all waste samples should be traceable to the precedent IDC.
- "Wastes Stream and Residue Identification And Characterization, Building 707, Version 6.0" (New Reference 17) .
- "Salt Residue Stabilization Building 707 Qualification Report, Revision 2. June 29, 1999 (Updated Reference 14) .
- Visual Examination Forms which present more detailed, drum-specific information, if available.

B. Technical Evaluation of the RFETS Non-Mixed Determination for TRU Stabilized Pyrochemical Salts-Profile No. RF005.01, September, 1999 (Revision 2.1)

1. The Stabilized Pyrochemical Salts Document, Rev.2.1 does not include sufficient acceptable knowledge information to completely confirm the validity of RFETS' non-hazardous waste determination for the IDCs 411X, 454X, and 433X. Specifically, the following information would have been required to facilitate a complete technical review:

- Neither the Stabilized Pyrochemical Salts Document, Rev.2.1, associated references, nor response to comments clarify or fully justify the apparent combination of all pyrochemical salts into a single waste stream (i.e., combination of IDC 411X, IDC 433X, and IDC 454X). Section 2.2 (page 3) of the Stabilized Pyrochemical Salts Document indicates that the salt residues previously generated at RFETS are categorized into 25 IDCs and that these 25 IDCs have been grouped into four categories for stabilization. It appears that this grouping of IDCs was done because the IDCs have similar matrices and concerns with respect to the pyro-oxidation process used to stabilize the pyrochemical salts waste stream. However, this grouping of varied IDCs into four main groups does not appear to be appropriate for the non hazardous waste determination since the analytical results reported in Appendix C (especially for chromium and lead) imply that there may be significant chemical differences with respect to metals between the individual IDCs.
- Data provided imply that IDCs 363, 364, 411, and 473 are from a single Electrorefining Process performed in Building 779, but the specific chemical differences between these initial IDCs are not addressed. Flow charts do not show IDC 363, 364, or 473, and the potential TC metal concentration in the various stages that should have been addressed to ensure that combination of the waste into a single IDC 411X is appropriate. Also, because IDC 654 originated from experimental activities, combining of this IDC with more "single process" activities is of question and would require further justification. Additionally, IDCs 413 and 426 represent clean-out waste from processes other than electrorefining, and inclusion of this waste in a single electrorefining waste stream is of question. Although some detailed metals data for IDC 411 are provided, it is unknown whether the actual 411X samples collected are representative of the entire combined waste stream, or are representative of only a small portion of the 411X waste stream.
- The Stabilized Pyrochemical Salts Document, Rev. 2.1 states that IDC 433X includes IDCs 427, 433, 434, and 435, which could also include various combinations of IDCs 365, 404, 412, 414, and 416. However, numerous questions regarding this combination and descriptions of waste streams are raised through examination of the Stabilized Pyrochemical Salts Document, Rev. 2.1 and associated references. For example, the Stabilized Pyrochemical Salts Document, Rev. 2.1 also states that IDCs 433-435 are both MSE salts and Salt Scrub IDCs. This information directly conflicts with data presented in the Backlog Waste

Reassessment Book (Backlog Book) , which states on page WF34-6 that IDCs 433-435 are the product of Salt Scrub and does not describe IDCs 433-435 as being products of MSE. In addition, if IDC 433 is intended to include Salt Scrub waste, the Stabilized Pyrochemical Salts Document, Rev. 2.1 should have explained why IDC 429 is not included in the grouping, as the Backlog Book includes this in Salt Scrub waste (p. WF34-6) . Also, the apparent combination of MSE and Salt Scrub processes into a single process would require additional justification, as it is unclear whether all Salt Scrub operations accepted only MSE waste, or if the Salt Scrub also accepted waste from activities other than MSE (as implied by the inclusion of non-MSE IDCs, such as IDC 365) .

- The Stabilized Pyrochemical Salts Document, Rev. 2.1 should have clearly described all input material to IDC 433X, including specific process origin. For example, the Stabilized Pyrochemical Salts Document, Rev. 2.1 implies that the “salt scrub” wastes include both MSE and Salt Scrub waste, but all MSE IDCs are not included, and the specific origin of all Salt Scrub waste is not described. That is, the inclusion of IDC 427 (MSE) should have been better justified, as well as the exclusion of IDCs 404-410. Also, the specific “parent” waste for IDCs 434 and 435 should have been discussed, as the Backlog Book states that IDC 433 represents salts from the salt scrub of IDC 427 MSE salts, but does not describe the original wastes processed to generate IDCs 434 and 435.
- The Stabilized Pyrochemical Salts Document, Rev.1 (Appendix A) provided a process flow diagram for the pyrochemical electrorefining process. However, the process flow diagram only shows that the process generated IDC 411 waste, it does not show how or where the remaining IDC’s (IDCs 363, 364, 473, 654, 413, and 426) that make up IDC 411X were generated. The Stabilized Pyrochemical Salts Document, Rev.2.1 should have been revised to provide process flow diagrams for each of the IDCs that make up IDC 411X. Also, the apparent *exclusion* of this flow diagram from Stabilized Pyrochemical Salts Document, Rev. 2.1 should have been justified.
- The Stabilized Pyrochemical Salts Document, Rev. 2.1 (Appendix A) also provides flow diagrams for MSE and MSE Salt Scrub. A-5 presents IDC 427, but the Stabilized Pyrochemical Salts Document, Rev. 2.1 states that MSE also includes IDCs 433-435, which are not shown on this diagram. Also, the Stabilized Pyrochemical Salts Document, Rev. 2.1 states that IDC 433X can include IDCs 365, 404, 412, 414, and 416, but flow diagrams do not present how these IDCs may enter the Salt Scrub process. The Stabilized Pyrochemical Salts Document, Rev. 2.1 also states that IDCs 433-435 are MSE products, but flow diagrams show these as Salt Scrub products. Also, no flow diagram shows how IDC 435 is generated. The Stabilized Pyrochemical Salts Document, Rev. 2.1 should have been revised to include better flow diagrams that show input/output for each IDC discussed to further explain combination of these IDCs.

- Combination of IDCs 454, 365, 414, 404, 412, and 416 into a single IDC 454X waste stream requires additional justification. Data provided indicate that the DOR process results in IDCs 365 and 414, with plutonium oxide being the specific plutonium-bearing feed material. IDCs 404, 412, and 416, on the other hand, are apparently generated through refinement of impure plutonium metals (presumably of various origins), bringing to question whether the combination of these IDCs is appropriate. The Stabilized Pyrochemical Salts Document, Rev.2.1, does not address the specific chemical input associated with each IDCs, which could result in different waste outputs, and which could also account for the apparent variability noted by RFETS itself.
 - In RFETS' response to NMED Comment No. 1 regarding the inadequacy of RFETS hazardous waste determination, RFETS indicated that 96% (i.e., all but one) of the containers sampled and deemed representative of IDC 454X were from IDC 414. The representativeness of the sampling data with respect to the entire combined waste stream IDC 454X is, therefore, of question because only one IDC was sampled. Also, information regarding the specific combined IDCs sampled in the IDC 411X sampling should have been provided, but available data do indicate that the preponderance of IDC 411X data is for IDC 411 alone, with no sampling data for IDCs 363, 364, 411, 473, 654, 413, or 426. Similarly, the supporting data for IDC 433X should have been provided, as no data were provided to support the supposition that IDC 433X samples are truly representative of that combined IDC. RFETS should have addressed whether the sampling performed is truly representative of IDCs 411X, 433X and 454X.
 - Data provided indicate that approvals received by the state regarding the non-hazardous nature of pyrochemical salts with respect to chromium were based upon process activities and storage activities which ensured that the chromium would be present in the trivalent state [see 40 CFR §261.4 (b) (6) (i)]. However, the data do not address the potential oxidation state as a result of pyrochemical salt stabilization, which is an oxidation process. RFETS should have addressed this process with respect to maintenance of trivalent chromium, and should have included any revisions or modifications of the State of Colorado's position regarding these waste as a result of salt stabilization.
2. The Stabilized Pyrochemical Salts Document, Rev.2.1 does not provide an adequate discussion of the disposition of at least one drum of IDC 411 waste that is known to contain a hazardous waste. Based on Reference 4 (Section 2.3, page WF34-12), a subpopulation of one 55-gallon drum (assigned IDC 411) that was assigned hazardous waste codes due to the presence of an inner package of incinerator ash. This information is confirmed by the Baseline Inventory Report (page P-RF-64, RF-MR-0411). The Stabilized Pyrochemical Salts Document, Rev.2.1 should have been revised to state how this drum has been/will be managed to ensure that this hazardous waste container is not incorporated into the IDC 411X waste.

3. The Stabilized Pyrochemical Salts Document, Rev.2.1 (pages 6 and 7) indicates that the salt stabilization treatment would sufficiently degrade any VOCs or SVOCs present in waste, but analytical/technical justification for this assertion is not provided. Specifically, headspace gas or solids sampling analytical information (including historical sampling/analysis data that would be considered acceptable knowledge data) , which demonstrates the absence of VOCs/SVOCs, should have been provided, if available. The response to NMED's original comment questioning the lack of SVOC/VOC analysis was addressed by referencing the QAPP and Attachment B.1, but these references did not directly address the question posed by NMED. While it appears "logical" that degradation of VOCs at such high temperature would occur, RFETS likewise called for high temperatures to completely volatilize mercury in samples, yet mercury was detected. Therefore, "logical" arguments followed by supporting analytical data are important.
4. The discussion (s) pertaining to radiolysis are incomplete. It is agreed that alpha radiation-sourced radiolysis would be mitigated by metal packaging around pyrochemical salts. However, neutron, beta and gamma radiation that may exit the metal container will also be generated and may also cause radiolytic gas generation; gas generation by these processes should also have been addressed. Also, although information provided imply that the proposed metal packaging will be maintained, NMED has no control over such maintenance and, hence, packaging configuration changes that could promote gas generation could occur without NMED knowledge or concurrence. Further, it is also possible that some - albeit hopefully minimal- contamination could occur *outside* of the containers within the 55 gallon or other drum. Data provided by RFETS indicate that while the pyrochemical salts themselves are not to contain plastics or other organics, plastic bags can be present internal to the 55 gallon containers which would be subject to radiolytic decay both from radioactive particles outside the metal containers and from radiation (e.g., gamma radiation) that might penetrate the metal containers. The best way to assess gas generation via radiolysis and to confirm RFETS assertions is through the collection of headspace gas data; without this information, potential gas generation via radiolysis will remain an issue. It should be noted that a memorandum entitled Interim Residue Characterization Status Report , December 31, 1999, page 3 clearly indicates that pyrochemical salt wastes are a source of radiolytic degradation of plastics that once encased these wastes.
5. RFETS indicates that the IDC 454X, 433X, and 411X sample results for each individual metal was transformed using log-normal transformation. However, RFETS does not indicate that a preliminary data review was performed on the IDC 433x and 411x data prior to this transformation, as is recommended in EPA guidance (EPA, 1998 and 1999). Additionally, the transformation performed was not consistent with the arcsine transformation recommended in SW-846. No tabular data for the normal results are provided, and there is no indication that the normal data has been graphically plotted to illuminate the structure of the data set. In addition, no summary statistics (i.e., mean, standard deviation) are provided for the normal data set for each individual IDC 433x and 411x metal. Thus, RFETS has not justified the selection of the log-normal transformation nor assessed whether the selection of other transformations (e.g., arcsine transformation) may be more applicable based upon the structure of the data set. By reviewing the data,

the appropriate approaches and limitations to using the data could be identified. For example, the selection of the normal mean has been determined to be a better estimate of the actual population mean if the coefficient of variation is less than 1.2 (Gilbert, 1987). Given the absence of the preliminary data review and insufficient presentation of data analysis, RFETS should have provided the following for each IDC: tabular normal data for each metal in each sample group; graphical displays of all normal data and transformed data for each metal in each sample group (see EPA, 1998); justification for the selected normality verification and data transformation specifically with respect to SW-846; and normal summary statistics for all metals in each sample group. In addition, RFETS should have identified that each data set has been assessed for outliers. Subsequent to the preliminary data review, RFETS should have provided transformation of the data, as necessary, and provided statistical justification for the transformation selected.

6. RFETS indicates that "...sufficient samples were taken to characterize these IDCs..." (Appendix C, Page C-5). However, no sample size calculations are provided to indicate that the number of samples collected are adequate to characterize the mean, given the normal standard deviation that was apparently observed in the data. Since no normal data or normal summary statistics (e.g., normal mean, normal standard deviation) are provided, the verification of required sample size has not been presented. As stated in SW-846 (Table 9-1) and in additional EPA guidance (EPA 1998, 1999), sample size calculations are to be performed on the normal data set. None of the guidance allows sample size calculations to be performed on lognormal data sets. In order to document that an adequate number of samples were collected, RFETS should have provided all sample size calculations based upon the normal data set for each metal in each sample group. Preliminary review of the IDC 411X, IDC 433X, and IDC 454X results found in Appendix C indicates that use of the unbiased methods could result in the waste being classified as hazardous for several analytes, including chromium, in IDC 411X, IDC 433X, and IDC 454X. Therefore, additional justification of the approach used by RFETS would be required, which should have specifically addressed the use of unbiased methods. Also, RFETS should have provided comparison of the results using the unbiased methods suggested by Gilbert to the methods used by RFETS and provided adequate justification for the methods that were chosen to make the hazardous waste determination.
7. Attachment B.2 of the Building 707 Salt Stabilization Qualification Report is a memorandum from TENERA in which log-transformed results are provided for 63 samples. The upper confidence limit of data presented in the Building 707 Salt Stabilization Qualification Report B.2 Attachment indicates that the UCL for chromium is very near the regulatory threshold using the log-transformed data. As such, calculation of the UCL using an alternative transformation (i.e., arcsine) or normal data may result in a UCL that is above the regulatory threshold for chromium, but RFETS did not justify the transformation method selected. NMED is therefore unable to determine if the data were appropriately transformed. RFETS should have provided all untransformed results, provided an evaluation of the normality of the data prior to transforming the data, and more thoroughly justified data transformation. Also, RFETS should have addressed the presence of chromium near or above the regulatory threshold in the first 63 samples

discussed in Attachment B.2, for data that are not transformed and for arcsin transformed data.

8. A memo from Jeanne Ball to Karen Phillips (SafeSites of Colorado, December 31, 1996) indicates in section 2.1.2, that IDC 411 samples previously analyzed for totals analysis had "failed." RFETS should have clarified what was meant by "failed," and why these totals results were not included in the acceptable knowledge for the IDC 411 waste stream. Also, all acceptable knowledge data pertaining to IDC 433X that includes sampling and analysis information should have been provided.

C. General Compliance With the Waste Analysis Plan of the November 13, 1998 WIPP Revised Draft Hazardous Waste Permit

1. Neither the Stabilized Pyrochemical Salts Document, Rev.2.1, nor References 1 and 2 (the RFETS TRU Waste Acceptable Knowledge Supplemental Information and the Acceptable Knowledge TRU/TRM Waste Stream Summaries) provide sufficient information regarding waste stream determination to adequately justify combining IDCs 363, 364, 411, 473, 654, 413, and 426 into a single waste stream of IDC 411X, or to justify combining IDCs 427, 433, 434, 435 and IDCs from IDC 454X into a single IDC 433X. Further, all of the processes (e.g., Salt Scrub, MSE, Electrorefining, Pyroredox, and Vacuum Melt) are distinctly different, even if the end result is generation of a salt waste; combination of these processes into a single waste stream would require additional justification. The WIPP Waste Analysis Plan (WAP) of the November 13, 1998 revised draft hazardous waste permit (revised draft permit), Attachment B, page B-2 defines a waste stream as "waste material generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents." While pyrochemical salts are the end-product of most of the activities which generates IDCs 411X, 433X and 454X, the processes generating these waste are distinct, separable activities. In addition, data suggest that the IDCs may be inappropriately combined (see comment B.1, above), and each of the combined IDCs (411X, 433X and 454X) may not have been representatively or sufficiently sampled to conclude that the analytical data are representative of that combined IDC.
2. If the acceptable knowledge summary entitled "RFETS TRU Waste Acceptable Knowledge Supplementation Information" (RF/RMRS-97-018) is intended to include the acceptable knowledge documentation required in revised draft permit Attachment B4, then it does not adequately address the WIPP WAP with respect to required content. The revised draft permit, Attachment B4, Section B-4-2b requires the acceptable knowledge written record to include a "summary that identifies all sources of waste characterization information used to delineate the waste stream. The basis and rationale for delineating each waste stream, based on the parameters of interest, shall be clearly summarized and traceable to referenced documents. Assumptions made in delineating each waste stream shall also be identified and justified." While the document appears thorough with respect to waste radionuclide identification and waste material parameter identification, it does not include sufficient information regarding the basis and rationale for delineating the waste

stream based on hazardous constituents/waste. Specifically, information provided by DOE as references to the original Rev.0 and provided as responses to NMED comments indicate that an extensive quantity of acceptable knowledge information pertaining to the chemical characteristics of IDCs 411X, 433X and 454X are not included in the Supplemental Information Document, including the analytical results for dozens of samples collected to assess the hazardous nature of waste, and historical sampling and analysis data (e.g., see memo from Jeanne Ball to Karen Phillips (SafeSites of Colorado, December 31, 1996) . Also, the document does not include, reference, or interpret all pertinent sources of hazardous waste characterization information. It should have been clarified whether this document was intended to be the AK summary required in the revised draft permit; if it was, the document should have been revised to address AK required and supplemental knowledge reporting requirements with respect to hazardous waste.

Also, a memo from Jeanne Ball to Karen Phillips (SafeSites of Colorado, December 31, 1996) indicates in section 2.1.2 that IDC 411 samples previously analyzed for totals analysis had failed. RFETS should have clarified this statement and indicated what was meant by "failed" and why these totals results were not included in the acceptable knowledge for the IDC 411 waste stream. Section B3-11 of revised draft permit attachment B3 indicates that the total and TCLP results will be functionally equivalent with the exception of a weight/volume conversion. As a result, a site may use either totals or TCLP in performance of any waste characterization activities. However, the revised draft permit does not indicate that a generator may exclude one analysis or the other if the results are not favorable to the expected outcome. Therefore, the failed totals results are appropriate for inclusion, at a minimum, in the acceptable knowledge record. RFETS should have better justified why the totals analyses were negated when the revised draft permit clearly allows these analyses, and should have, at a minimum, revised all acceptable knowledge documentation to include this information.

3. The Stabilized Pyrochemical Salts Document (Section 3.4.2.1) indicates that RFETS established the number of samples and sampling frequency using the method for retrievably stored waste (using a statistical sampling method) , even though RFETS considers the stabilized pyrochemical waste to be newly generated (Section 3.4.1) , which would use a control chart method for sample number determination. According to the revised draft permit, the waste would be considered retrievably stored because it was generated before NMED approval of the CAO site audit for RFETS. Because NMED suggestions regarding the revised draft permit were incorporated in the final permit, sites may use either a control chart or statistical sampling method to calculate the number of samples to be collected (whichever results in more samples being taken), once the permit becomes effective.

NMED could not determine whether the final permit condition had been met (i.e., use of either statistical or control chart methods, whichever results in more samples being taken) because the IDC 411X and IDC 433X total metals data were not provided for review. However, based on the limited information provided in Appendix C of the Stabilized Pyrochemical Salts Document, Rev.2.1, IDC 411X and IDC 433 do not appear to be

homogeneous with respect to chromium (and possibly lead) contamination. It therefore appears that the use of the newly generated waste methods for determining the required number of samples could require collection of *many more* samples than would be required under the retrievably stored methods. However, since this activity transpired pre-permit (i.e., under interim status), the waste would be considered retrievably stored, and the appropriate sample number collection methodology (i.e., retrievably stored) was used.

4. The metals data associated with IDC 411X, IDC 433X and IDC 454X were log-normalized. Attachment B2 does not expressly prohibit the log-normalization of data, but SW-846 indicates that non-normal data should be subject to arcsin transformation. From a WIPP WAP compliance standpoint, this is a concern since the log-normalized data were used (Section 3.4.2.1 of the Stabilized Pyrochemical Salt Document, Rev.1) to calculate the number of samples of IDC 411X, IDC 433X and IDC 454X waste to be collected, and NMED questions whether correct assumptions were made with regard to waste stream identification which ultimately lead RFETS to use log-normalized data. While the Stabilized Pyrochemical Salts Document, Rev.2.1 did not provide the actual metals analysis data to allow statistical manipulation of the normal chromium and lead analytical results, it is possible that if the normal or arcsin transformed metals data had been used to calculate the required number of samples (using the formula provided in Attachment B2 in Equation B2-7 of the revised draft permit), the site could be required to collect considerably more than those which were actually collected.
5. Since the Stabilized Pyrochemical Salts Document, Rev.2.1 did not provide the actual metals analysis data for IDC 411X and IDC 433X, it was not possible determine the normality of the data or to calculate UCL_{90} concentrations based on the normal or arcsin transformed results. Based on the information regarding the IDC 411X metals samples provided in Appendix C, it appears possible that if the UCL_{90} concentration for chromium (and possibly lead) were calculated using the normal or arcsin transformed data, the UCL_{90} for chromium might exceed the regulatory threshold limit (RTL). If this were true, the waste would not be adequately characterized as non-hazardous for chromium in accordance with the revised draft permit WIPP WAP.
6. Headspace gas analyses are required for every waste container as specified in Module II.C and Section B-3 (a) (1) of Attachment B of the revised draft permit. However, Section 3.4.1 of the Stabilized Pyrochemical Salts Document, Rev.2.1 indicates that headspace gas sampling and data were not performed on IDC 411X, IDC 433X, and IDC 454X containers. RFETS justifies this exception based on visual examination results, acceptable knowledge information regarding the presence of VOCs/SVOCs, and lack of radiolytic gas generation. However, several questions remain concerning this justification (refer to comments under Section B, above).
7. Solids sample analysis for SVOCs and VOCs is specified in the WAP, Attachment B the revised draft permit. The WIPP WAP does not exclude confirmatory sampling of SVOC and VOC totals analyses based on process knowledge. However, SVOC and VOC analysis of salt samples was not performed for IDCs 411X, 433X, and 454X, as the Stabilized Pyrochemical Salts Document, Rev.2.1 (Section 3.4.2) indicates that the

thermal stabilization process would volatilize or destroy all potential VOC and SVOC compounds in the waste. Refer to Comment No. B.3, above.

8. Visual examination apparently did not include videotaping of the actual examination. Section B1-3 of Attachment B1 of the revised draft permit WIPP WAP specifies that all visual examination activities will be video/audio taped and documented on a visual examination data form.
9. There is no indication that the facility collected co-located samples (field duplicates) for IDCs 411X and 454X or equipment blanks (all IDCs) . There is also no indication that certified clean disposable sampling equipment or adequate decontamination procedures, as specified in section B1-2b of the revised draft permit WIPP WAP, were used. While an exemption may have been granted by CAO with regard to sampling and duplicate sample collection, this exemption does not agree with the revised draft permit.
10. The Stabilized Pyrochemical Salts Document (Section 3.4.2.2) indicates that RFETS used a carbon steel cup to collect waste samples. However, the revised draft permit WIPP WAP does not allow the use of scoop sampling for retrievably stored waste. Since this activity has transpired pre-permit (i.e., under interim status), the waste would be considered retrievably stored, and therefore the waste was not sampled in accordance with the WIPP WAP. If this activity had occurred after the final permit was effective and the site audit report was approved, and the waste were considered newly generated, then the activity would probably be in compliance with the final permit.
11. Numerous exemptions have been granted generator sites with regard to activities such as headspace gas sampling, sample protocol, etc. While some of these exemptions are included in the responses to comments information package and are referenced in the Stabilized Pyrochemical Salts Document, Rev.2.1, additional exemptions could have been given that were not included in the Stabilized Pyrochemical Salts Document, Rev.2.1 and which could impact WIPP WAP compliance. All relevant exemptions should have been provided to NMED for review.

References

(EPA, 1992) *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities - Addendum to Interim Final Guidance (DRAFT)*, Office of Solid Waste Permits and State Programs Division, USEPA, July 1992

(Gilbert, 1987) Gilbert, R., *Statistical Methods for Environmental Pollution Monitoring*, Van Nostrand Reinhold, New York