



MEMORANDUM

TO: Trais Kliphuis, Steve Holmes, Ricardo Maestas, and Coleman Smith, New Mexico Environmental Department, Hazardous Waste Bureau
FROM: Connie Walker
DATE: October 15, 2013
SUBJECT: Summary of NMED AK Observation of CCP AMWTP Recertification Audit A-14-01

On September 30- October 3, 2013, the New Mexico Environment Department (NMED) observed the Acceptable Knowledge (AK), Non-Destructive Examination (NDE), and headspace gas/solid sampling portions of DOE CBFO certification audit of the Advanced Mixed Waste Treatment Project (AMWTP). The scope of Audit A-14-01 was to evaluate the adequacy, implementation, and effectiveness of technical and related QA processes for S3000 and S5000 waste streams. The audit was performed in Idaho Falls, and this memo documents observations of the Acceptable Knowledge portion of the audit.

Acceptable Knowledge

The AK technical specialist was Mr. Dick Blauvelt and QA auditor was Mr. Porf Martinez. Mr. Steve Carpenter, Mr. Timothy Veneman, Mr. Randy Morse, and Ms. Nancy Kirk, with AMWTP, were interviewed (AKEs and SPMs). Eric Schweinsberg (SPM) was also interviewed. These individuals provided documents and information as requested by the audit team. The NMED observer was Ms. Connie Walker (NMED support contractor, Trinity Engineering Associates). The documents presented in Attachment A were among those provided in hard copy and electronically to the audit team, including the NMED observers.

The following BDRS and other traceability information were provided for review:

Table with 4 columns: Drum, Historic Drum Information Provided (WTS Screen Shot)?, VE/RTR BDR, HSG/SS BDR. Rows include various drum IDs and their corresponding BDR information.



Drum	Historic Drum Information Provided (WTS Screen Shot)?	VE/RTR BDR	HSG/SS BDR
1052732-100 gallon drum with four pucks	Not applicable	----	Not Required
10042545-puck	No	RTR13-00072	----
10043842-puck	No	RTR13-00094	----
10043937-puck	No	RTR13-00080	----
10043939-puck	No	RTR14-00047	----
<b>BN222</b>			
10062725	Yes	RTR5-06319	ALD08033M ALD8011N ALD8017V ALD08015S SSG08-00011
<b>BNIN218</b>			
100010347	Yes	RTR04-00036	ALD05004N ALD5004S ALD5004V ALD5006M SSC05-00041

**Summary:**

CBFO Audit A-14-01 was performed in a professional manner. The scope of the audit was CH S3000 (solids) and S5000 (debris) Summary Category Groups, represented by Waste Streams BN510.1 and BN510.2 (supercompacted debris waste), BN222 (solidified plutonium recovery incinerator waste from Rocky Flats) and BNINW218 (Building 374 waste water sludge generated at Rocky Flats). AMWTP documents AK differently than CCP. Instead of assembling all permit required information in a single document, AMWTP presents programmatic and stream specific information in separate documents, and also further describes waste streams, chemical composition, and radiological characteristics of the waste in three additional documents. The current document hierarchy as presented in Report RPT –TRUW-12 Revision 20 is presented below.

**Advanced Mixed Waste Treatment Project**  
**AMWTP Waste Stream Designations**

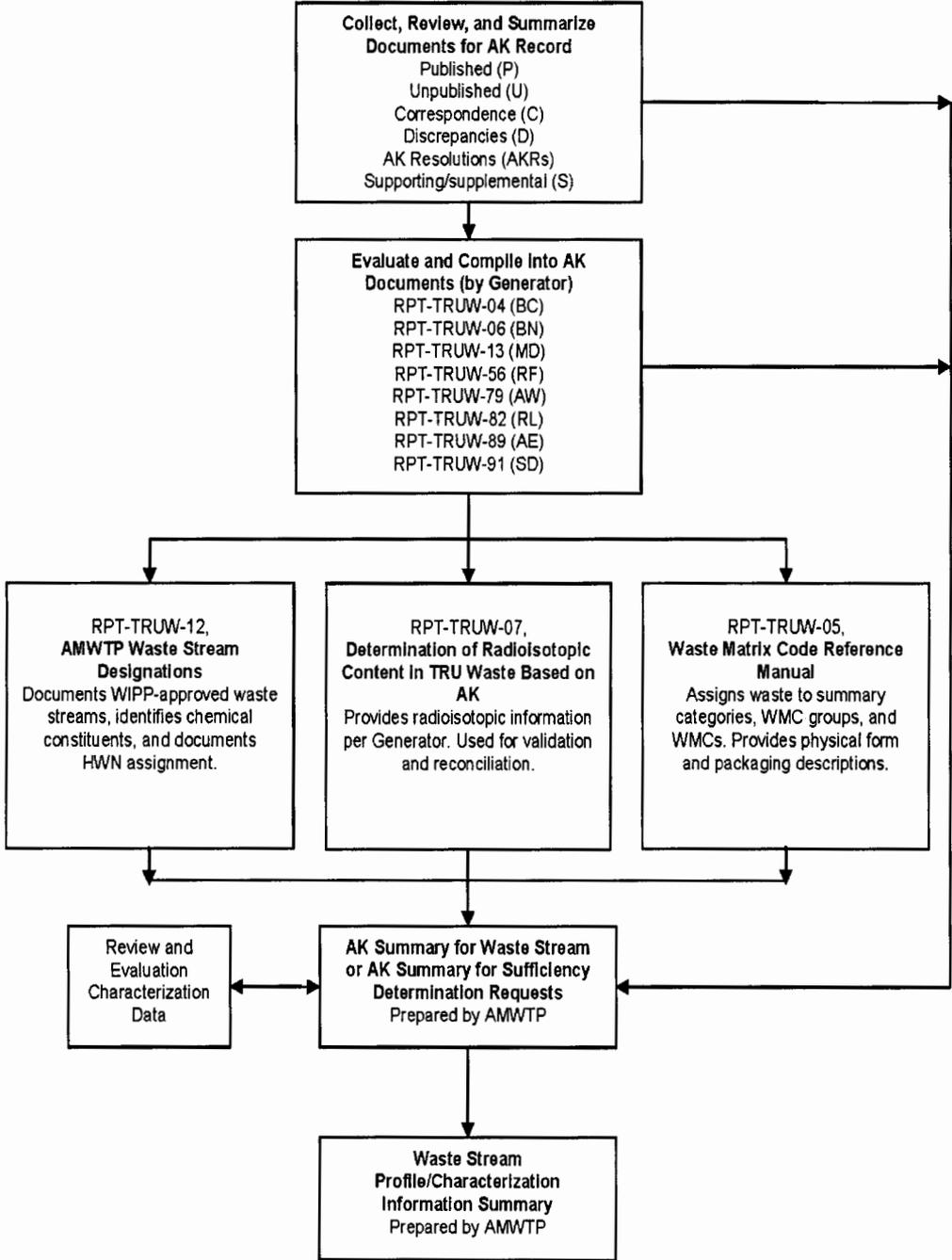


Figure 1. General document hierarchy and information flow for AK.

As shown in the figure above, AMWTP AK information is presented in several different AWMTP documents. This approach is acceptable, as the permit does not mandate the format in which permit-required acceptable knowledge information must be shown. For additional detail about the AMWTP AK documentation process, please refer to the 2012 AMWTP Audit Observation Memorandum that includes a detailed discussion of the waste stream development, IDC assignment, and associated information. Note that each time the supercompacted BN510 waste stream accepts waste from a new generator that adds a hazardous waste number to the waste stream, AMWTP retires the current BN510 waste stream and generates a new waste stream (e.g. BN510.1 is superseded by BN510.2). This also requires generation of a new waste stream profile form. Since the last AMWTP recertification audit, AMWTP added new drums originally sourced from Argonne East and the INL Materials Fuel Complex (formerly Argonne West), resulting in waste stream BN510.2 (RPT-TRUW-83 Revision 6). In the future, AMWTP anticipates the addition of Subsurface Disposal Area (SD) waste in historic storage at AMWTP, as well as other INL waste, both of which will likely result in new waste streams (e.g. BN510.3 and BN510.4) and new waste stream profile forms. AMWTP will also add LANL waste to the supercompacted stream, but because no new HWN will be added, a new waste stream will not be created.

Several changes were required to the Mound BN216 AK Summary as a result of the previous 2012 AWMTP recertification audit. Outstanding changes that were to be made to address permit requirements were included in Attachment B of the previous 2012 Audit Memo. Although not a topic of the current audit, the NMED observer obtained a copy of the current Mound BN216 AK Summary Report and determined that changes as a result of last year's audit had been made to that AK Summary.

The WIPP WAP requires the collection of AK information to determine and substantiate waste streams including the assignment of hazardous waste numbers (e.g. Sections C4-3b, C4-3c). To verify appropriate assembly, incorporation, and interpretation of AK information, the AK Summaries and AK Baseline Reports must be adequately referenced so that statements regarding hazardous waste number assignments and interpretations are supported and verified. Further, AK Summaries and Baseline Reports should be updated to ensure that they reflect current understanding of hazardous waste number determinations, defense status, etc. For example, the statement that waste "may have been comingled" with defense waste to support the defense determination should be updated to state the waste "was comingled", to reflect the current status of AK knowledge and information. The NMED observer identified the following observations; this information was shared with the CTAC technical specialist, QA auditor, and AMWTP staff during the audit once the NMED staff was apprised of the observations and approved sharing of the information:

**RPT-TRUW-79, Rev. 2**  
**Acceptable Knowledge Document for Materials and Fuels Complex Waste**

1. Page 7, 1<sup>st</sup> full paragraph states waste "may have been" comingled with non-defense waste to impart a defense determination to the waste as a whole. It was suggested that this language be changed to "was" comingled, to support the defense determination.

2. Page 16 of 56, Section 3.4.6.1 states that various Argonne West IDCs (153, 154 and 155) “will be incorporated” into the MFC waste stream. This statement should be modified to indicate that the waste has been incorporated into the waste stream so that the composition of the waste stream with respect to IDC content is up to date, and so that the information in the Baseline report reflects information in references.
3. Table 4, which deals with HWN assignments, should be revised to include references that support the chemical assignments, thus better supporting the HWN determinations. Note that Table 9 in the same report includes said references, making it easier to verify the data.
4. Page 43 of 56, 2<sup>nd</sup> paragraph states that D hazardous waste codes “may not be retained”. This language should be changed to “have not been retained”, to support the HWN determinations in the report and to make the sentence consistent with the assigned HWNs.

#### **RPT-TRUW-15, Rev. 12**

##### **Acceptable Knowledge Summary for Building 374 Sludge (BNINW218)**

1. Page 9 discusses the “drill and plug” process associated with liquid removal from drums, and states, on this page, that the holes will be plugged after draining. However, Page 14 does not say the holes will be plugged, instead inferring that the containers will just be overpacked. The document should be revised to ensure consistency.
2. Pages 17-20 addresses hazardous waste number assignments, but of the 19 or more paragraphs presented within the page span, only one paragraph includes a single reference citation to support the hazardous waste number assignments. As a result, it is not possible to verify any of the hazardous waste number presented in the document based on the AK Summary because the origin of the statements and conclusions is not presented. Hazardous waste number justification cannot be verified.

#### **RPT-TRUW-77, Rev. 1**

##### **Acceptable Knowledge Summary for Solidified Plutonium Recovery Incinerator Waste (BN222)**

1. Page 13 of 22, 3<sup>rd</sup> paragraph includes no reference justifying the assignment of HWNs D006, D007 and D008 to the waste stream. This is important because this section specifically states that the codes are associated with historic sampling and analysis results, but without a reference the interpretation of these data cannot be verified.
2. Table 1-3 includes a citation to reference 25, but this reference does not support the IDC discussions pertaining to IDC RF818 and 820. The table should be revised to include references for these IDCs.

Issues identified during the audit by the CTAC technical specialist and QA auditor are presented in Attachment B. The CTAC technical specialist included Item 5 to address NMED’s concerns presented above. Note that in the past, AMWTP prepared document control reviews (DCRs) during the audit to address identified issues. However, no DCRs were prepared during the audit specific to the above

issues, so NMED observers at the next recertification audit may ask to examine the most recent version of the above reports to determine whether the issues were addressed.

## **ATTACHMENT A REFERENCES**

*Note: All references available electronically were provided on disk to the NMED representative present at the audit. Most of the documents presented below were available electronically, while others were reviewed in hard copy as no electronic version was provided. Not all references provided electronically may be presented below. In specific, AMWTP provided several cover sheets for document change requests, but these contained no information about the DCR content so these files aren't always presented..*

### **Procedures, AK Reports, and Waste Stream Profile Packages**

AK Resolution Checklist, AKR 13-791, IDC-RF-371 to 374 dated 7/30/2013

AK Resolution Checklist Form 1070, ICD RF002, BNINW216, 8/29/2013

AK Resolution Checklist Form 1070, IDC RF 371, AKR-13-791, 7/30/2013

AK Resolution Form AKR -05-236R2, IDC RF 292 Container IDC change, 2/8/2006

AK Resolution Ledger.xls dated 9/26/2013, 11:45 AM

AMWTP Form1084, Revision 2, and AK Source Document Reference list, Effective: 11/10/10 printed 9/16/2013

AMWTP-RPT-TRUW-37, Revision 0, Sampling Report for BNINW218, Lot 3, June 2, 2005

BN510.2 Waste Stream Profile Form Package, 9/9/2013

BN510.1 Waste Stream Profile Form Package, 9/10/2010

BN510.1 WSPF Change Notices, 2/26/2013, through 1/1/2012

BNINW218 WSPF Change Notices, 4/2/2008- 1/7//2005

Document Control Revisions (DCRs) for documents RTP TRUW-DCR 11343, RPT-TRUW-59 DCRs 9301 and 11350, RPT-TRUW-63, RPT-TRUW-09, RPT-TRUW-23, modified as of August 22, 2013

DQO Reconciliation Form 1597, BN222, 3/6/2013

Final Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 3 – SPC-012-13, Steve Carpenter to George Byram, 5/16/2013

Headspace Gas Sampling Report Memorandum for BN510.1 Boxline 3 – SPC-011-13, Steve Carpenter to George Byram, 5/15/2013

INST-TRUW-8.13.1, TRU Programs Site Project Office Process, Revision 19, 9/9/13

MP-TRU-8.1, Certification Plan for INL Transuranic Waste, Revision 22, 09/12/12

MP-TRU-8.2, Quality Assurance Project Plan, Revision 16, 6/04/12

MP-TRU-8.11, Data Reconciliation, Revision 24, 9/25/12

MP-TRU-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation, Revision 24, 12/12/11

MP-TRU-8.14, Preparation of Waste Stream Profile Forms, Revision 12, 2/15/10

MP-TRUW-8.40, INL Waste Acceptance, Revision 9, 10/01/12

MP-TRUW-8.41, Offsite DOE CH-TRU Waste Acceptance, Revision 3, 03/09/09

MP-TRUW-8.45, Virtual Overpack Process Planning, Revision 11, 2/25/13

NCRs 5700, 7114, 7506, 8800, 11784, 14013, 18872, 63334, 63335, 64325, 64323, 65811, 67276, 67277, 74975, 79980, 75306, 75836, 79574, dated 5/17/2004 to 7/29/2013

QA Container Open and Closed NCR Quick Search, dated 10/2/2013

RPT-TRUW-05, Waste Matrix Code Reference Manual, Revision 32, 7/16/13

RPT-TRUW-06, Acceptable Knowledge Baseline Document for AMWTP Waste, Revision 14, 7/05/12

RPT-TRUW-12, AMWTP Waste Stream Designations, Revision 20, 5/22/13

RPT-TRUW-15, Acceptable Knowledge Summary for Building 374 Sludge (BNINW218), Revision 12, 7/31/13

RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste- Rocky Flats Plant, Rev. 5 5/09/12

RPT TRUW-77, Acceptable Knowledge Summary for Solidified Plutonium Recovery Incinerator Waste (BN222), Revision 1, 6/17/12

RPT-TRUW-79, Acceptable Knowledge Document for Materials and Fuels Complex Waste, Revision 2, 3/5/13

RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1), Revision 5, 3/18/13

RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste [BN510.2], Revision 6, 9/09/13

RPT-TRUW-89, Acceptable Knowledge Document for Argonne National Laboratory-East Waste, Revision 1, 3/19/13

RPT-TRUW-91, Acceptable Knowledge Document for Pre-1980 INL-Exhumed SDA Waste, DRAFT Revision 1, 2013 (no date specified)

RPT-TRUW-92, Acceptable Knowledge Document for Select Idaho National Laboratory (INL) Facilities, Revision 0, 7/18/13

Sampling Plan for BNINW218 – Lot 2 - EPS-065-2004, to Elvin Dumar from Eric Schweinsberg, 8/16/2004

Sampling Plan for BNINS218, Lot 3, Revision 1, SPC-037-2005, from Steve Carpenter to Elvin Dumas, 6/1/2005

Solids Random Sample Selection for BN222, Lot 1, SPC -006-06, from Steve Carpenter to Eric Schweinsberg, 9/16/2009

Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1, Boxline Lot 3 SPC-002-12, Steve Carpenter, 1/9/2012

Waste Material Parameter Weight per Unit Waste Calculation for Proposed BN222 Waste Stream, 9/15/2009

Waste Stream BNINW218, Lot 2 -EPS-006-2005, Random Core Selection Memo, to Kerry Watson, 2/8/2005

Waste Stream Profile Package for Solidified Plutonium Recovery Incinerator Waste (BN222), 10/2/2012

Waste Stream Profile Package BNIN218 Building 375 Waste Stream Profile Package, Revision 1, September 17, 2004, Change Notice 1 February 2, 2005, Change Notice 2 June 14, 2007, Change Notice 3, April 2, 2008

Various Puck and Drum screen shots or electronic holds, drums 10151647, 10168846, 10174323, 10178026, 1021646, 1021647, 1078949, 10478649, 10478654, 10478672, 10478679, 10801715, 10801724, 104778658, 10062755, 10501793, BN10210399, BN10478617, BN10495918, BN10010347, BN10010347, 106275, 10368526, 10210349, 10478607, 10495918, provided 10/2/2013 and 10/3/2013

### **List of Additional References**

- C050A, C063A, C114A, C191A, C207A, C235A, C245A, C290A, C326A, C530A, C534A, C554A, C557A, C605A, C850A, C851A, C852A, C859A, C1045A, C1051A, C1055S, C1278A
- D043A, D062A, D076A, D096A, D114A
- P001A, P012A, P014A, P015A, P016A, P024A, P057A, P063A, P078A, P090A, P203A, P218A, P220A, P230A, P286A, P287A, P288A, P306A, P307A, P310A, P314A, P315A, P361A, P368A, P380A, P420A, P426A, P435S, P443A, P679A, P693A, P708A, P709A, P710A, P711A, P712A, P716A, P718A, P727A, P728A, P279A, P734A, P750A, P751A, P842A, P845A, P849A, P850A, P859S, P862A, P1085S, P1374A, P1378S, P1379A, P1380, P1389A, P1390A, P1391A, P1392A, P1393A, P1409S, P1415A, P1432S, P1465A, P1469A, P1470A, P1471A, P1820S, P1829A, P1850S,
- U122A, U228S, U236S, U237S, U275S, U326S, U327S, U328S,

**The latest version of the complete reference list, Form 1084, has been provided with this memorandum.**

**ATTACHMENT B: ISSUES IDENTIFIED DURING THE AUDIT**

**AUDIT A-14-01**  
**AMWTP Recertification Audit**  
**Date: Thursday, October 3, 2013**

**FINAL CONCERN SUMMARY**

No.	TS/Auditor	Description of Concern	Requirements Comments
1	Rhett Bradford Berry Pace	<p>Question #5 on the BDR Checklist Report (ITR Review) asks the question; <i>"Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable."</i></p> <p>INST-FOI-22 was suspended February 6, 2012, per Document Change Request (DCR) #10698. This DCR (Block 7) should have been noted to indicate that a Software Data Change Request (SDCR) should have been initiated.</p> <p>Note: Although AMWTP is taking steps to correct this one condition, the rest of the audit team will be reviewing ITR checklists in other disciplines in search of similar instances.</p> <p><b>UPDATE: On Wednesday, October 2<sup>nd</sup>, similar instances were found in RTR (ITR Checklists).</b></p> <p><b>WITHDRAWN: Additional information was obtained that abated the concern.</b></p>	<p>MP-DOCS-18.4, Rev 38, <i>Document Control</i>, Step 3.2.3.5: <i>"If any of the items listed below impact the proposed change, identify the appropriate information on the DCR...Software Change Requests/System Data Change Requests (Block 7)"</i></p> <p>CBFO-94-1012, QAPD, Rev 11, Section 1.4.A: <i>"Documents shall be prepared, reviewed, approved, issued, used, and revised to prescribe processes, specify requirements, or establish design."</i></p>
2	Jim Schuetz	<p>Software code modules are being changed and tested by various developers before previous testing passes. The developer checking out a code version should be required to verify that all testing related to previous Software Change Requests passes prior to checking out a code module for the next change scope.</p> <p>This work step is not currently described in AMWTP Procedure INST-CD&amp;M-11.2.1, Revision 8, <i>Software Version Control</i>.</p>	<p>Quality Assurance Program Document DOE/CBFO-94-1012, Rev. 11 Section 2.1.1 A. states: <i>"Work shall be performed in accordance with established technical standards and administrative controls. Work shall be performed under controlled conditions using approved instructions, procedures, or other appropriate means."</i></p> <p>MP-DOCS-18.3, Revision 8, <i>Developing</i></p>

The information contained on this form is preliminary. All results and concerns are subject to final review and classification by CBFO QA.

**AUDIT A-14-01**  
**AMWTP Recertification Audit**  
**Date: Thursday, October 3, 2013**

**FINAL CONCERN SUMMARY**

<b>No.</b>	<b>TS/Auditor</b>	<b>Description of Concern</b>	<b>Requirements Comments</b>
			<i>Management Procedures, Section 3.2.6: "In the procedure section, identify the requirements or steps to be followed by using sub-sections, including where appropriate, the person or organization assigned responsibility for those requirements."</i>
3	H. Kirschenmann	<p>The frequency of QAPD-related independent assessments (audits) is in question because such assessments have not been scheduled or performed since June 2011 (IA-11-01). AMWTP should consider clarifying periodicity in MP-M&amp;IA-17.2, <i>Independent Assessment</i>, Rev. 11.</p> <p>*Note: MP-M&amp;IA-17.2, <i>Independent Assessment</i>, Rev. 11, Section 3.1.2 states: "The QA Manager/designee shall schedule assessments of items, processes, systems, and services at a frequency commensurate with their hazards, status, and importance."</p>	None.
4	D. Blauvelt/P. Martinez	In the AK Summary Report RPT-TRUW-15, Rev. 12, for Building 374 Sludge, the waste stream volume is currently unsupported by an appropriate AK Source Document.	MP-TRUW-8.13, Rev. 25, <i>Collection, Review and Management of AK Documentation</i> , Section 3.5.1.4 states: "Develop a container inventory and establish waste stream volumes and time periods of generation for the waste stream, as required by the WIPP-WAP."
5	D. Blauvelt/P. Martinez	<p>AK audit team recommends the following:</p> <ol style="list-style-type: none"> <li>1. AMWTP AK personnel make a change to AK Summary RPT-TRUW-77: For AK Summary RPT-TRUW-77, Rev. 1, for solidified Pu</li> </ol>	None.

The information contained on this form is preliminary. All results and concerns are subject to final review and classification by CBFO QA.

**AUDIT A-14-01**  
**AMWTP Recertification Audit**  
**Date: Thursday, October 3, 2013**

**FINAL CONCERN SUMMARY**

No.	TS/Auditor	Description of Concern	Requirements Comments												
		<p>Recovery Incinerator, the waste material parameter weight estimate memo C605A is in the AK record, but should be referenced in the AK Summary.</p> <p>2. AMWTP AK personnel review AK Summaries RPT-TRUW-15, RPT-TRUW-77, and RPT-TRUW-79 and clarify applicable AK Source Documents supporting the hazardous waste number assignments.</p> <p>3. AMWTP AK personnel review the above AK Summaries and clarify language tense issues as needed. (For example, possibly change wording from “may be done” to “has been done”).</p>													
6	D. Blauvelt/P. Martinez	<p>Eleven of the following 19 AK Summary Reports reviewed did not have a revision log as part of the AK Summary Report:</p> <table style="margin-left: 40px;"> <tr> <td>RPT-TRUW-09</td> <td>RPT-TRUW-52</td> </tr> <tr> <td>RPT-TRUW-23</td> <td>RPT-TRUW-53</td> </tr> <tr> <td>RPT-TRUW-43</td> <td>RPT-TRUW-59</td> </tr> <tr> <td>RPT-TRUW-44</td> <td>RPT-TRUW-63</td> </tr> <tr> <td>RPT-TRUW-46</td> <td>RPT-TRUW-77</td> </tr> <tr> <td>RPT-TRUW-48</td> <td></td> </tr> </table> <p><b>WITHDRAWN:</b> Additional information was obtained that abated the concern.</p>	RPT-TRUW-09	RPT-TRUW-52	RPT-TRUW-23	RPT-TRUW-53	RPT-TRUW-43	RPT-TRUW-59	RPT-TRUW-44	RPT-TRUW-63	RPT-TRUW-46	RPT-TRUW-77	RPT-TRUW-48		<p>MP-DOCS-18.3, Rev. 8, Developing Management Procedures:</p> <p>Section 1.0, “This procedure implements the requirements of QAPP-01, AMWTP Quality Assurance Program Plan, and the Department of Energy (DOE)/Carlsbad Field Office (CBFO) Quality Assurance Program Document (QAPD) which dictate the development of implementing procedures <i>or other appropriate documentation</i> for use during operation of Advanced Mixed Waste Treatment Project (AMWTP).”</p> <p>Section 3.2.2.1, Include a revision log in each MP.</p> <p>CBFO QAPD, Rev. 11, Definition of Document:</p>
RPT-TRUW-09	RPT-TRUW-52														
RPT-TRUW-23	RPT-TRUW-53														
RPT-TRUW-43	RPT-TRUW-59														
RPT-TRUW-44	RPT-TRUW-63														
RPT-TRUW-46	RPT-TRUW-77														
RPT-TRUW-48															

The information contained on this form is preliminary. All results and concerns are subject to final review and classification by CBFO QA.

**AUDIT A-14-01**  
**AMWTP Recertification Audit**  
**Date: Thursday, October 3, 2013**

**FINAL CONCERN SUMMARY**

<b>No.</b>	<b>TS/Auditor</b>	<b>Description of Concern</b>	<b>Requirements Comments</b>
			"Written or pictorial information that describes, specifies, reports, or certifies activities, requirements, procedures, or results".
7	C. Riggs/P. Y. Martinez	It is recommended that AMWTP evaluate the necessary changes needed within the Waste Tracking System (WTS) to address requirement changes within the WIPP Hazardous Waste Facility Permit to ensure consistency between the electronic quality record and printed copy.	

The information contained on this form is preliminary. All results and concerns are subject to final review and classification by CBFO QA.