

Rocky Flats Environmental Technology Site
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**Rocky Mountain
Remediation
Services**

Fax

To: Dave Grosek **From:** Ted A. Hopkins

Fax: 3710 **Pages:** 11 pages including cover

Phone: 3305 **Date:** November 4, 1997

Re: Response to comments on 123 Closure Plan **CC:** Randy Leitner

Urgent **For Review** **Please Comment** **Please Reply** **Please Recycle**

● **Comments:** Please review my response to your comments and let us know if they adequately address your concerns. If at all possible, I am planning on submitting to Kaiser-Hill the modified 123 Partial Closure Plan by COB, today. I am available to meet with you at anytime to discuss my responses. I know Randy would also like to participate if there are still any outstanding issues.

I can be reached at : 966-7652 or pager 4119

ADMIN RECORD

B123-A-00015

Comment Resolution Form 123
 Responses prepared by Ted A. Hopkins

Location	Comment	Originator	Response
6.1.1	<p>The closure plan lists many chemicals that cannot be hazardous waste, and does not list those that made the system a hazardous waste unit. Previous Part A permits for Unit 40 include the following EPA hazardous waste codes, and these should be addressed in the closure plan. If these waste codes do not apply then an explanation should be given.</p>	<p>Dave Grosek</p>	<p>Chris Gilbreath, CDPHE, has maintained during the scoping and review process that the only waste streams/contaminants of concern for this portion of RCRA Unit 40 are those wastes that were disposed of in this portion of the unit. A review of the WSRIC system identified only those waste streams that were originally included in the Closure Plan. However, since VOAs, Metals, and a fingerprint analysis are going to be conducted, the inclusion of all of the waste codes you identified (except for F007, F008, F009) does not impact the document. Therefore, the listing of RCRA Unit 40 Waste Codes (minus the cyanide wastes) and the associated contaminant has been added to Section 6.1.1. An explanation of why the F007-F009 codes were omitted (no cyanides used in electroplating operations in Building 123) was also included. A copy of this section will be FAXed to you for review.</p>
7.1.1	<p>Section 7.1.1 is not clear.</p>	<p>Dave Grosek</p>	<p>RCRA Unit 40 is an interim status unit. RMRS Permitting and K-H Environmental Compliance are preparing a site-wide interim status Closure Plan for all interim status units at Rocky Flats. This plan has not been submitted to the State. Until that time, K-H Environmental Compliance and RMRS have agreed with the State to follow the requirements for closure identified in The Rocky Flats Environmental Technology Site RCRA Permit, Part X. Section C of this document states, "Clean closure will be conducted in accordance with one of three methodologies (decontamination, debris rule decontamination, or unit removal)." These options are the ones identified in the 123 Partial Closure Plan. Section 7.1.1 identifies the performance standards for clean closure which are found in Section C-6 of Part X of the Permit.</p>
6.1.1.	<p>Section 6.1.1. is not clear.</p>	<p>Dave Grosek</p>	<p>Section 6.1.1 has been modified to include all EPA Waste Codes associated with this portion of RCRA Unit 40</p>
6.1.1.	<p>The system must be treated for constituents found in the Part A Permit and not those listed in the closure plan.</p>	<p>Dave Grosek</p>	<p>The State has taken a different opinion. The State is requiring that the Closure Plan address only those waste streams identified as being disposed of in this portion of RCRA Unit 40. However, since we are sampling for VOCs, metal, and fingerprint: all EPA waste codes except F007-F009 are now being addressed.</p>
7.1.1	<p>List each constituent and the associated standard each constituent will be compared to, so a determination of a pass/fail can clearly be made. RFCA Attachment 5 standards appear to be more stringent than RCRA standards. Why are RFCA standards used rather than the RCRA standards already used and accepted at the</p>	<p>Dave Grosek</p>	<p>Two tables have been added identifying the contaminants for which we are sampling and their associated EPA waste codes. A reference to Tier 2 actions levels as defined in Attachment 5 were identified as the closure performance standard. A regurgitation of these standards was not considered necessary. The RFCA standards were used in response to a State comment. The Permit requires (under Section C, Clean Closure by Decontamination) that the final rinsate</p>

Location	Comment	Originator	Response
	Site?		contains concentrations of priority pollutants (identified as having been managed in the unit) and heavy metal concentrations less than the maximum contaminant levels for drinking water." Chris Gilbreath recommended (for clarity) that a reference be made to the Tier 2, Attachment 5 of RFCA be used to ensure exactly what standard was being used
7.0	All the above information should clearly be presented in Section 7.0 Closure Performance Standard. Will the absolute standard "all visible waste residuals have been removed" work? Even the RCRA clean debris surface standard allows 5% to remain.	Dave Grosek	With the addition of the two tables and a discussion on the contaminants for which sampling is required and a reference to Tier 2, (in my opinion) no further explanation is required. The standard for the rinsate is part of the RFETS Permit. This standard is much less restrictive than the Debris Rule. I do not have to meet clean surface debris standards for the inside of piping following this rinsate standard. Visible contamination on a tank system would not include contaminants in the pipe but would include visible contamination on the outside of the pipe, tank surfaces (inside and out) etc. Any questions in regard to its application would be directed to the State (Chris Gilbreath) for clarification.
7.1.1	Section 7.1.1. should list all constituents included in the Performance standard and the criteria.	Dave Grosek	I disagree. Section 6.1.1 now identifies the contaminants of concern along with their associated EPA Waste Codes and . Section 7.1.1 identifies the Closure Performance Standards, the contaminants of concern were identified in 6.1.1. The State has previously accepted this approach.
7.3	How are we going to look at the inside of pipes? This approach does not seem practical.	Dave Grosek	You are correct in that the Debris Treatment option is not practical for piping. It was added simply to maintain all our possible options. It is very practical for sumps and tanks associated with this unit. It is possible that a fiber optic instrument could be used to inspect the pipe after and extraction or destruction technology was used; or the pipe could be cut up into pieces short enough to allow visual inspection.
6.1.1	Section 6.1.1 includes radionuclides as being present, however, there is no mention of radiation protection or sampling in the plan.	Dave Grosek	We are planning on doing a gross alpha/beta sampling. However, this sampling was omitted from the Closure Plan since the State does not have authority to regulated radioactive materials. Mixed waste, yes; but not the radioactive isotope.

Comments on B123 Closure Plan

Dave Grosek 3305

October 24, 1997

Section 6.1.1 and 7.1.1 are not clear.

Part 6.1.1 of the closure plan lists many chemicals that cannot be hazardous waste, and does not list those that made the system a hazardous waste unit. Previous Part A Permits for Unit 40 included the following EPA hazardous waste codes, and these should be addressed in the closure plan. If these waste codes do not apply then an explanation should be given.

Part A	Included in Section 6 of Closure Plan
D001	No
D002	Yes, acids and bases
D004	No
D005	No
D006	No
D007	No
D008	No
D009	No
D010	No
D011	No
D018	No
D019	No
D028	No
D029	No
D035	No
D038	No
D040	No
D043	No
F001	No
F002	No
F003	No
F005	Yes (Toluene)
F007	No
F008	No
F009	No

TED HOPKINS

Kent - 5215 10/27

Here are Grosek's comments

on B123 RCRA Closure Plan

Look different & extensive

Please get these addressed ASAP

Bill Felt

The system must be treated for these constituents - not those listed in the closure plan. Most of the ones in the closure plan are irrelevant for RCRA closure.

List each constituents and the associated standard each constituent will be compared to, so a determination of pass/fail can clearly be made. RFCA Attachment 5 standards appear to be more stringent than RCRA standards. Why are RFCA Attachment 5 standards used rather than the RCRA standards already used and accepted at the Site?

All the above information should clearly be presented in Section 7.0 Closure Performance Standard. Will the absolute standard "all visible waste residuals have been removed" work? Even the RCRA clean debris surface standard allows 5% to remain.

Section 7.1.1 should list all constituents included in the Performance standard and the criteria.

Section 7.3. How are we going to look at the inside of pipes? This approach does not seem practical.

Section 6.1.1 includes radionuclides as being present, however, there is no mention of radiation protection or sample the plan.

6.0 CHARACTERIZATION

Dave Geosck + Chris Gilbreath (comment #1)

6.1 EPA WASTE CODES ASSOCIATED WITH THIS UNIT and SAMPLING PARAMETERS

EPA WASTE CODES ASSOCIATED WITH THIS UNIT and SAMPLING PARAMETERS

The following EPA Waste Codes were listed in the Part A application for RCRA Unit 40: D001, D002, D004-D011, D018, D019, D028, D029, D035, D040, F001, F002, F003, F005, F007, F008, and F009. However, not all of the above referenced waste streams have been identified as being disposed of in RCRA Unit 40 in Building 123. The WSRIC identifies the following process wastes as being disposed of in the process waste system:

- From 1987 to 1997, organic compounds such as Dibutyl-n-diethyl carbamoyl phosphate (DDCP) and toluene were used in very small quantities for Americium separation in Building 123;
- Acids: nitric acid, hydrofluoric acid, sulfuric acid, hydrochloric acid, acetic acid, formic acid, oxalic acid, and perchloric acid;
- Bases: ammonium hydroxide and sodium hydroxide;
- Radionuclides: various isotopes of plutonium, americium, uranium, and curium;
- Metals: Calcium, Magnesium, and Iron effluents, beryllium (trace amounts);
- Ammonium nitrate, ammonium thiocyanate, ammonium chloride, ammonium oxalate, ammonium hydroxylamine, ethylene glycol, DDCP, Diethylenetriaminepentaacetate (DTPA) potassium permanganate, potassium permanganate, sodium nitrate, sodium carbonate and toluene.

After treatment, using ^{either} Option #1 or Option #3, a representative sample of the final rinse water will be taken in Building 428 near Tank #853 where a sampling tap is located. All liquid wastes from Building 123 flow into this tank. This sample will be tested for:

- The Target Analyte List for Metals (Table 6-1);
- Volatile Organics (as identified in Table 6-2); and
- Fingerprinting (pH, flash point, TSS, turbidity, etc.)

These sample parameters will account for all of the EPA Waste codes associated with RCRA Unit 40 except for F007, F008, F009. These listed waste codes are for cyanide wastes from electroplating operations. No electroplating operations utilizing cyanide were conducted in Building 123 and are therefore omitted from testing. Table 1 and Table 2 list the contaminants to be analyzed for, and their associated EPA Waste Codes.

Based upon process knowledge and application of the Contained-In Policy, materials from this unit (pipelines, pumps, sumps, etc.) must be managed as RCRA mixed waste and analyzed for characteristics unless Options 1 and 3, Rinsate or Debris Treatment standards, identified in this document are met.

**TABLE 6-1 MODIFIED TARGET ANALYTE LIST METALS
AND ASSOCIATED EPA WASTE CODES**

Aluminum, Al	Antimony, Sb	Arsenic, As D004
Barium, BaD005	Beryllium, Be	Cadmium, Cd D006
Cesium, Cs	Chromium, CrD007	Cobalt, Co
Copper, Cu	Iron, Fe	Lead, Pb D008
Lithium, Li	Magnesium, Mg	Manganese, Mn
Mercury, Hg * D009	Molybdenum, Mo	Nickel, Ni
Potassium, K	Selenium, SeD010	Silicon, Si
Silver, AgD011	Sodium, Na	Strontium, Sr
Thallium, Tl	Tin, Sn	Vanadium, V
Zinc, zn		

Mercury is not part of the TAL metal list but was added because of its common usage in laboratories.

**TABLE 6-2. MODIFIED TARGET COMPOUND LIST OF VOLATILE ORGANIC
COMPOUNDS AND ASSOCIATED EPA WASTE CODES**

1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane F002	1,2-Dichloroethene (total)
1,2-Dichloropropane	1-1-1-TrichoethaneF001/F002	1-1-Dichloroethane
1,1-DichloroethyleneD029	1-2-Dichloroethane D028	2-Hexanone
Bromoform	Bromomethane	Carbon disulfide F005
Carbon tetrachlorideD019/F001	Chloroethane	ChlorobenzeneD021/F002
Chloroform D022	Chloromethane	cis-1,3-Dichloropropene
Dibromochloromethane	EthylbenzeneF003	Methyl ethyl ketone (butanone)D035/F005
Methylene chloride F001/F002	PyridineF005	Styrene
TetrachloroethyleneD039/F001/F002	Toluene F005	trans-1,3-Dichloropropene
TrichloroethyleneD040/F001/F002	Vinyl ChlorideD043	Xylenes (total) F003
AcetoneF003	4-Methyl-2-pentanone	Benzene D018/F005

6.1.1 Above Ground Portion of RCRA Unit 40 in Building 123

Building 123 has always housed laboratory operations. Laboratories routinely generate organic compounds most of which (prior to 1987) were disposed of in the process waste system. Some of these chemicals would today be characterized as listed wastes. In 1987, administrative controls were established that prohibited the disposal of listed hazardous waste to the waste process system. In addition, satellite accumulation areas were established to manage all listed hazardous wastes generated in Building 123. Beginning in 1989, this system was used predominately as an elementary neutralization unit for D002 corrosive waste streams and was in use until the building ceased operations in 1997. The above ground pipeline system was upgraded in 1995 when approximately 40% of this system was replaced.

6.2 SOIL CHARACTERIZATION

A complete soil characterization of the Building 123 area will be conducted as part of the activities outlined in the Building 123 Proposed Action Memorandum. Soil characterization will include sampling and analysis of the soil beneath and surrounding Building 123. Following removal of the building superstructure, samples will be collected through the slab to determine the necessity for soil remediation. The Building 123 and IHSS 121 SAP has been written to guide characterization activities in these areas. The SAP incorporates a review of existing records to establish the location of potentially contaminated areas and to define sampling protocol. The RFETS Statistical Applications Group will be used to ensure that statistically valid and representative samples of each waste stream are taken. Current planning indicates a need for approximately fifty (50) soil samples beneath the slab of Building 123 and from areas surrounding underground, abandoned OPWLs. Samples will be collected at depths immediately below the pipe to locate any contamination that may have leaked from the lines. Samples will be analyzed for Volatile Organic Compounds (VOCs), Target Analyte List (TAL) Metals, radionuclides, and nitrates. Data quality requirements supporting the analysis effort will conform to criteria established in "Guidance for the Data Quality Objective Process", EPA QA/G-4 (EPA 1994). The Data Quality Objectives are listed in the "Building 123 and IHSS 121 SAP". (See RF/RMRS-97-023)

7.0 CLOSURE PERFORMANCE STANDARD

The closure performance standard specifies that hazardous waste facilities are to be closed in such a way as to (1) minimize the need for further maintenance at the facility, and (2) protect human health and the environment by controlling, minimizing, or eliminating potential releases of hazardous waste to the environment (6 CCR 1007-3, Section 265.111).

For ease in achieving RCRA Closure Performance Standards, that portion of RCRA Unit 40 associated with Building 123 will be divided into two components: above ground piping and below ground piping. These units will be treated independently, however, RCRA Closure will not be completed until both components achieve the RCRA Closure Performance Standards and are certified closed by an independent Colorado Registered Professional Engineer. Any of the three closure options described below may be used to achieve closure. For example, the above ground piping may be closed using the Decontamination Option while the below ground might be closed using Debris Treatment.

LETTER FROM KENT DORR, KAISER-HILL TO BILL FITCH, DOE.

In order to expedite the decommissioning of Building 123 and meet the Hazardous Waste Idle Equipment/Tank Management Consent Order that requires Tank 853 in Building 428 be RCRA stable by December 31, 1997, Kaiser-Hill and RMRS are proposing to remove the above ground portion of RCRA Unit 40 within Building 123 prior to receipt of an approved RCRA Closure Plan.

Kaiser-Hill and RMRS recognize that removal of this unit prior to receipt of a State approved RCRA Closure Plan will be conducted solely at the risk of the operators and does not signify State of Colorado approval for these operations. The removal of the above ground piping will follow the proposed RCRA Closure plan and will consist of decontaminating the pipe with a solution capable of removing the contaminants of concern, testing the final rinsate to verify treatment standards, and the removal of all piping. Decontamination will be conducted in accordance with the Rocky Flats Environmental Technology Site RCRA Permit, Part 10 Closure, Section C, Clean Closure by Decontamination. The proposed above ground piping removal will be restricted to the above ground portion of RCRA Unit 40 that is color coded pink in Attachment 1 of the RCRA Closure Plan.

The following is a summary of the proposed project:

- An independent, Colorado certified professional engineer will be hired to verify and certify that all elements of the proposed RCRA Closure Plan are followed;
- The piping will be decontaminated with solution capable of removing the types of wastes previously managed. Water containing sodium carbonate and trisodium phosphate will be used as the decontamination solution;
- The piping will be flushed with this solution to remove any remaining trace amounts of contamination;
- The final rinsate closure performance standards for internal surfaces of tanks (as described in RCRA Permit, Part X Closures) will be used to evaluate the effectiveness of the decontamination;
- The final rinsate volume will not exceed 5% of the capacity of the piping system; and
- A sample of the rinsate will be taken at a sample port in Building 428 near tank 853. All process waste waters from Building 123 flow to this tank. The entire final rinsate sample will be collected and sampled. That sample will be tested for Target Analyte Metals, Fingerprint (pH, turbidity, TSS, flashpoint, etc.) and Volatile Organics (see attached tables.)
- When decontamination is complete and the sample taken, the piping will be sectioned and placed in storage as RCRA hazardous/mixed waste pending receipt of analytical results of the testing and a State approved RCRA Closure Plan. The piping will then be shipped off-site as either hazardous/mixed waste or non-hazardous/LLW.
- Any rinsate generated from the piping will be sent to Building 374 for treatment.

CLOSURE PERFORMANCE STANDARDS

The above ground portion of RCRA Unit 40 will be considered decontaminated and meet Closure Performance Standards if:

- All visible waste residuals have been removed and;
- The final rinsate contains concentrations of contaminants listed in Table 1 and Table 2 of this document below the Tier 2 action levels as defined in Attachment 5 of the Rocky Flats Compliance Agreement (RFCA);

EPA WASTE CODES ASSOCIATED WITH THIS UNIT and SAMPLING PARAMETERS

The following EPA Waste Codes were listed in the Part A application for RCRA Unit 40: D001, D002, D004-D011, D018, D019, D028, D029, D035, D040, F001, F002, F003, F005, F007, F008, and F009. The Target Analyte List for Metals and Volatile Organics coupled with pH and Flash point testing account for all of the EPA Waste codes associated with RCRA Unit 40 except for F007, F008, F009. These listed waste codes are for cyanide wastes from electroplating operations. No electroplating operations utilizing cyanide were conducted in Building 123 and are therefore omitted from testing. Table 1 and Table 2 list the contaminants to be analyzed for, and their associated EPA Waste Codes.

TABLE 1 MODIFIED TARGET ANALYTE LIST METALS AND ASSOCIATED EPA WASTE CODES

Aluminum, Al	Antimony, Sb	Arsenic, As D004
Barium, Ba D005	Beryllium, Be	Cadmium, Cd D006
Cesium, Cs	Chromium, Cr D007	Cobalt, Co
Copper, Cu	Iron, Fe	Lead, Pb D008
Lithium, Li	Magnesium, Mg	Manganese, Mn
Mercury, Hg * D009	Molybdenum, Mo	Nickel, Ni
Potassium, K	Selenium, Se D010	Silicon, Si
Silver, Ag D011	Sodium, Na	Strontium, Sr
Thallium, Tl	Tin, Sn	Vanadium, V
Zinc, zn		

Mercury is not part of the TAL metal list but was added because of its common usage in laboratories.

TABLE 2. TARGET COMPOUND LIST OF VOLATILE ORGANIC COMPOUNDS AND ASSOCIATED EPA WASTE CODES

1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane F002	1,2-Dichloroethene (total)
1,2-Dichloropropane	1-1-1-Trichloroethane F001/F002	1-1-Dichloroethane
1,1-Dichloroethylene D029	1-2-Dichloroethane D028	2-Hexanone
Bromoform	Bromomethane	Carbon disulfide F005
Carbon tetrachloride D019/F001	Chloroethane	Chlorobenzene D021/F002
Chloroform D022	Chloromethane	cis-1,3-Dichloropropene
Dibromochloromethane	Ethylbenzene F003	Methyl ethyl ketone (butanone) D035/F005
Methylene chloride F001/F002	Pyridine F005	Styrene
Tetrachloroethylene D039/F001/F002	Toluene F005	trans-1,3-Dichloropropene
Trichloroethylene D040/F001/F002	Vinyl Chloride D043	Xylenes (total) F003
Acetone F003	4-Methyl-2-pentanone	Benzene D018/F005