Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

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MAY 27 2004

04-AMCP-0320

Mr. Darin Rice, Acting Program Manager
Hazardous Waste and Toxics Reduction Program
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504

Dear Mr. Rice:

TRANSMITTAL OF 200 AREA EFFLUENT TREATMENT FACILITY (ETF) DELISTING MODIFICATION, REVISION 1

This 200 Area ETF Delisting Modification, Revision 1, originally transmitted in December 2001 is being resubmitted now with additional supporting documentation. This delisting modification, when approved, will support Hanford Site cleanup objectives. The original 200 Area ETF Delisting Petition was submitted to the U.S. Environmental Protection Agency (EPA) by RL in October 1992. EPA gave notice of approval of the delisting petition in the Federal Register dated June 13, 1995. Ecology provided approval via letter on December 7, 1995. The original delisting petition was prepared to exempt the treated effluent from the 200 Area ETF from Subtitle C of Resource Conservation and Recovery Act. The initial petition covered F001 through F005 and F039 waste derived only from F001 through F005 waste.

The present modification (Revision 1) includes an increase in the annual effluent volume limit from 72 million liters per year to 210 million liters per year; an expanded waste constituents list; and the ETF concentrated waste (i.e., powders and evaporator brine) resulting from processing existing and projected wastewaters. The expanded delisting will include all constituents associated with wastewaters projected for treatment in the ETF. The projected wastewaters include multi-source leachate, the Waste Treatment Plant effluents, and other hazardous wastewaters (e.g., analytical laboratory operations, research and development studies, waste management wastewater, and environmental remediation and deactivation projects).

The following five items are included in the enclosed compact disk:

- The 200 Area ETF Delisting Modification, DOE/RL-98-62, Revision 1, November 2001; 55991
- Crosswalk – 200 Area ETF Delisting Petition DOE/RL-98-62, Revision 1, State Regulations, Federal Regulations: A crosswalk (matrix) between Washington Administrative Code (WAC) 173-303-910 requirements, 40 CFR 260 requirements, and the location of the information within the delisting modification package or associated documents;
- Evaluation of state-only criteria designations for 200 Area ETF treated effluents, (i.e., an evaluation performed to determine the applicability of state-only WT and WP codes pursuant to WAC 173-303-100);

- A copy of the proposed EPA Draft Rule Making; and
- RL letter, J. Hebdon to M. A. Wilson, Ecology, "Proposed Verification Constituents and Delisting Values for Treated Wastewater at the Effluent Treatment Facility," dated February 5, 2002. 56403

The following relevant items are currently available in the Administrative Record:

- Waste Sampling and Characterization Facility Quality Assurance Plan, SD-CP-QAPP-017, Revision 6, June 2003; 61796
- Ecology letter, P. F. Brake to H. K. Meznarich, FHI, "New Certificate and Scope of Accreditation for Waste Sampling and Characterization Facility," 0401312, dated April 22, 2004;
- Application for Risk-Based Disposal Approval for Polychlorinated Biphenyls, DOE/RL-2002-02, Revision 2, February 2002;
- State Waste Discharge Permit 4500 for the 200 Area ETF; and
- Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste at the Hanford Site, Revision 6, WA7890008967, and implementing documents.

RL requests Ecology's approval of the enclosed delisting modification by September 30, 2004. If you have questions, please contact me, or your staff may contact Matt McCormick, Assistant for the Central Plateau, on (509) 373-9971, or Joel Hebdon, Director, Office of Environmental Services, on (509) 376-6657.

Sincerely,

Keith A. Klein
Manager

AMCP:RDH

Enclosure (Compact Disk)

cc w/encl:
D. Bartus, EPA
N. Ceto, EPA
S. Harris, CTUIR
J. Hyatt, FHI
R. Jim, YN
P. Sobotta, NPT
M. A. Wilson, Ecology
Administrative Record
Environmental Portal, A3-01

Crosswalk --- 200 Area Effluent Treatment Facility Delisting Petition DOE/RL-98-62, Rev. 1, State Regulations, Federal Regulations

State Citation 173-303	Federal Citation 40 CFR 260	Delisting Petition Test
WAC 173-303-910(1):General petitions WAC 173-303-910(1)(a) Any person may petition the department to modify or revoke any provision in this chapter. This subsection sets forth general requirements which apply to all such petitions. The remaining subsections of this section describe additional requirements for specific types of petitions.	40 CFR 260.20(a) Any person may petition the Administrator to modify or revoke any provision in parts 260 through 266, 268 and 273 of this chapter. This section sets forth general requirements which apply to all such petitions. … Section 260.22 sets forth additional requirements for petitions to exclude a waste or waste-derived material at a particular facility from Sec. 261.3 of this chapter or the lists of hazardous wastes in subpart D of part 261 of this chapter.	no response required
WAC-173-303-910(1)(b) Each petition must be submitted to the department by certified mail and must include	40 CFR 260.20(b) Each petition must be submitted to the Administrator by certified mail and must include:	no response required
WAC-173-303-910(1)(b)(i) The petitioner's name and address	40 CFR 260.20(b)(1) The petitioner's name and address;	1.1 NAME OF PETITIONER; 1.2 CONTACTS 1.3 FACILITY NAME AND LOCATION
WAC-173-303-910(1)(b)(ii) A statement of the petitioner's interest in the proposed action;	40 CFR 260.20(b)(2) A statement of the petitioner's interest in the proposed action;	1.5. STATEMENT OF NEED/JUSTIFICATION
WAC-173-303-910(1)(b)(iii) A description of the proposed action, including (where appropriate) suggested regulatory language; and	40 CFR 260.20(b)(3) A description of the proposed action, including (where appropriate) suggested regulatory language;	1.4 DESCRIPTION OF PROPOSED DELISTING ACTION
WAC-173-303-910(1)(b)(iv) A statement of the need and justification for the proposed action, including any supporting tests, studies, or other information.	40 CFR 260.20(b)(4) A statement of the need and justification for the proposed action, including any supporting tests, studies, or other information.	1.5 STATEMENT OF NEED/JUSTIFICATION
WAC-173-303-910(1)(c) The department will make a tentative decision to grant or deny the petition and give public notice of the tentative decision in writing. … The public comment period will be a minimum of forty-five days.	40 CFR 260.20(c) The Administrator will make a tentative decision to grant or deny a petition and will publish notice of such tentative decision, either in the form of an advanced notice of proposed rulemaking, a proposed rule, or a tentative determination to deny the petition, in the Federal Register for written public comment.	no response required

173-303-910(1)(d) Upon the written request of any interested person, the director may, at his discretion, hold a conference to consider oral comments on the action proposed in the petition. A person requesting a conference must state the issues to be raised and explain why written comments would not suffice to communicate the person's views. The director may in any case decide on his own motion to hold a conference.	40 CFR 260.20(d) Upon the written request of any interested person, the Administrator may, at his discretion, hold an informal public hearing to consider oral comments on the tentative decision. A person requesting a hearing must state the issues to be raised and explain why written comments would not suffice to communicate the person's views. The Administrator may in any case decide on his own motion to hold an informal public hearing.	no response required
173-303-910(1)(e) After evaluating all public comments the department will make a final decision in accordance with RCW 34.05.330 or 34.05.240. The department will either deny the petition in writing (stating its reasons for denial), or grant the petition and, when appropriate, initiate rule-making proceedings in accordance with RCW 34.05.330.	40 CFR 260.20(e) After evaluating all public comments the Administrator will make a final decision by publishing in the Federal Register a regulatory amendment or a denial of the petition.	no response required
WAC 173-303-910(3) Petitions for exempting dangerous wastes from a particular generator.	Sec. 260.22 Petitions to amend part 261 to exclude a waste produced at a particular facility. 40 CFR 260.22(a) Any person seeking to exclude a waste at a particular generating facility from the lists in subpart D of part 261 may petition for a regulatory amendment under this section and Sec. 260.20. To be successful: (1) The petitioner must demonstrate to the satisfaction of the Administrator that the waste produced by a particular generating facility does not meet any of the criteria under which the waste was listed as a hazardous or an acutely hazardous waste; and (2) Based on a complete application, the Administrator must determine, where he has a reasonable basis to believe that factors (including additional constituents) other than those for which the waste was listed could cause the waste to be a hazardous waste, that such factors do not warrant retaining the waste as a hazardous waste. A waste which is so	no response required

	excluded, however, still may be a hazardous waste by operation of subpart C of part 261. 40 CFR 260.22(b) The procedures in this Section and Sec. 260.20 may also be used to petition the Administrator for a regulatory amendment to exclude from Sec. 261.3(a)(2)(ii) or (c), a waste which is described in these Sections and is either a waste listed in subpart D, or is derived from a waste listed in subpart D. This exclusion may only be issued for a particular generating, storage, treatment, or disposal facility. The petitioner must make the same demonstration as required by paragraph (a) of this section. Where the waste is a mixture of solid waste and one or more listed hazardous wastes or is derived from one or more hazardous wastes, his demonstration must be made with respect to the waste mixture as a whole; analyses must be conducted for not only those constituents for which the listed waste contained in the mixture was listed as hazardous, but also for factors (including additional constituents) that could cause the waste mixture to be a hazardous waste. A waste which is so excluded may still be a hazardous waste by operation of subpart C of part 261.	
WAC 173-303-910(3)(b) To be successful, the generator must make the demonstrations required in WAC 173-303-072(3) and, where applicable, (4).	no equivalent federal citation	see WAC 173-303-072 section below
WAC 173-303-910(3)(c) Each petition must include, in addition to the information required by subsection (1) of this section:	40 CFR 260.22(i) Each petition must include, in addition to the information required by Sec. 260.20(b):	no response required
WAC 173-303-910(3)(c)(i) The name and address of the laboratory facility performing the sampling or tests of the waste;	40 CFR 260.22(i)(1) The name and address of the laboratory facility performing the sampling or tests of the waste;	Not provided: WSCF lab
WAC 173-303-910(3)(c)(ii) The names and	40 CFR 260.22(i)(2) The names and qualifications	This information is not provided in the petition.

qualifications of the persons sampling and testing the waste;	of the persons sampling and testing the waste;	Contained in state accreditation package attached.
WAC 173-303-910(3)(c)(iii) The dates of sampling and testing;	40 CFR 260.22(i)(3) The dates of sampling and testing;	contained in LEMIS database Appendix D, 200 AREA EFFLUENT TREATMENT FACILITY POWDER CHARACTERIZATION, was generated from LEMIS; Lab Data in LabCore; LEMIS extracts data from LabCore, currently being transitioned into Hanford Environmental Information System (HEIS)
WAC 173-303-910(3)(c)(iv) The location of the generating facility;	40 CFR 260.22(i)(4) The location of the generating facility;	1.3 FACILITY NAME AND LOCATION 2.0 CURRENT OPERATIONS figure 2-1 Locations of the 200 Area Effluent Treatment Facility and the Liquid Effluent Retention Facility on the Hanford Site
WAC 173-303-910(3)(c)(v) A description of the manufacturing processes or other operations and feed materials producing the waste and an assessment of whether such processes, operations, or feed materials can or might produce a waste that is not covered by the demonstration;	40 CFR 260.22(i)(5) A description of the manufacturing processes or other operations and feed materials producing the waste and an assessment of whether such processes, operations, or feed materials can or might produce a waste that is not covered by the demonstration;	2.1 FACILITY AND PROCESS DESCRIPTION
WAC 173-303-910(3)(c)(vi) A description of the waste and an estimate of the average and maximum monthly and annual quantities of waste covered by the demonstration;	40 CFR 260.22(i)(6) A description of the waste and an estimate of the average and maximum monthly and annual quantities of waste covered by the demonstration;	3.0 WASTEWATERS PROJECTED FOR TREATMENT IN THE 200 AREA EFFLUENT TREATMENT FACILITY 3.1 MULTI-SOURCE LEACHATE 3.2 WASTE TREATMENT PLANT EFFLUENTS 3.3 OTHER HAZARDOUS WASTEWATERS
(vii) Pertinent data on and discussion of the factors delineated in WAC 173-303-072(3) and, where applicable, (4);	40 CFR 260.22(i)(7) Pertinent data on and discussion of the factors delineated in the respective criterion for listing a hazardous waste, where the demonstration is based on the factors in Sec. 261.11(a)(3);	see WAC 173-303-072 section below and 40 CFR 260.11 section below
WAC 173-303-910(3)(c)(viii) A description of the methodologies and equipment used to obtain the representative samples;	40 CFR 260.22(i)(8) A description of the methodologies and equipment used to obtain the representative samples;	2.4 TREATED EFFLUENT VERIFICATION SAMPLING
WAC 173-303-910(3)(c)(ix) A description of the	40 CFR 260.22(i)(9) A description of the sample	2.4 TREATED EFFLUENT

sample handling and preparation techniques, including techniques used for extraction, containerization and preservation of the samples;	handling and preparation techniques, including techniques used for extraction, containerization and preservation of the samples;	VERIFICATION SAMPLING
WAC 173-303-910(3)(c)(x) A description of the tests performed (including results);	40 CFR 260.22(i)(10) A description of the tests performed (including results);	4.1.1 Treatability Groups "... Appendix B contains a discussion of the constituent identification process and the resulting consolidated constituents list." 4.2 "Powder characterization data are presented in Appendix D."
WAC 173-303-910(3)(c)(xi) The names and model numbers of the instruments used in performing the tests and the date of the last calibration for instruments which must be calibrated according to manufacturer's instructions;	40 CFR 260.22(i)(11) The names and model numbers of the instruments used in performing the tests; and	Information in lab books
WAC 173-303-910(3)(c)(xii) The following statement signed by the generator of the waste or his authorized representative: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.	40 CFR 260.22(i)(12) The following statement signed by the generator of the waste or his authorized representative: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.	1.6 CERTIFICATION STATEMENT
WAC 173-303-910(3)(c)(h) Any waste for which an exemption is sought will remain designated and be subject to the applicable requirements of this chapter until the generator of the waste is notified by the department that his waste is exempt.	no equivalent federal citation	no response required
WAC 173-303-072(3) Bases for exempting wastes. To successfully petition the department to exempt a waste, the petitioner must demonstrate to the satisfaction of the department that:	no equivalent federal citation	no response required

WAC 173-303-072(3)(a) He has been able to accurately describe the variability or uniformity of his waste over time, and has been able to obtain demonstration samples which are representative of his waste's variability or uniformity; and, either	40 CFR 260.22(h) Demonstration samples must consist of enough representative samples, but in no case less than four samples, taken over a period of time sufficient to represent the variability or the uniformity of the waste.	Appendix D, 200 AREA EFFLUENT TREATMENT FACILITY POWDER CHARACTERIZATION, provides 'means' 'maximums' 'minimums' 'standard deviation' 'number of sampling events' Sampling and analysis conducted under WAP (per RCRA permit)
WAC 173-303-072(3)(b) The representative demonstration samples of his waste are not designated DW or EHW by the dangerous waste criteria, WAC 173-303-100; or	40 CFR 260.22(a)(1) The petitioner must demonstrate to the satisfaction of the Administrator that the waste produced by a particular generating facility does not meet any of the criteria under which the waste was listed as a hazardous or an acutely hazardous waste; and 40 CFR 260.22(e) If the waste is listed with the code ``H'' in subpart D, 40 CFR 260.22(e)(1) The petitioner must demonstrate that the waste does not meet the criterion of Sec. 261.11(a)(2); and 40 CFR 260.22(e)(2) Based on a complete application, the Administrator must determine, where he has a reasonable basis to believe that additional factors (including additional constituents) other than those for which the waste was listed could cause the waste to be a hazardous waste, that such factors do not warrant retaining the waste as a hazardous waste; and	See Evaluation of state-only criteria designation for 200 Area Effluent Treatment Facility (ETF) treated effluents (i.e. an evaluation performed to determine the applicability of state-only WT and WP codes pursuant to WAC 1273-303-100).
WAC 173-303-072(3)(c) It can be shown, from information developed by the petitioner through consultation with the department, that his waste does not otherwise pose a threat to public health or the environment. However, this basis for exemption is not applicable to wastes that exhibit any of the characteristics specified in WAC 173-303-090, except 173-303-090 (6)(a)(iii).	40 CFR 260.22(c) If the waste is listed with codes ``I'', ``C'', ``R'', or ``E'', in subpart D, 40 CFR 260.22(c)(1) The petitioner must show that the waste does not exhibit the relevant characteristic for which the waste was listed as defined in Sec. 261.21, Sec. 261.22, Sec. 261.23, or Sec. 261.24 using any applicable methods prescribed therein. The petitioner also must show	See Evaluation of state-only criteria designation for 200 Area Effluent Treatment Facility (ETF) treated effluents (i.e. an evaluation performed to determine the applicability of state-only WT and WP codes pursuant to WAC 1273-303-100). Analyses for characteristics will be performed as required by the Waste Analysis Plan per the RCRA permit.

	that the waste does not exhibit any of the other characteristics defined in Sec. 261.21, Sec. 261.22, Sec. 261.23, or Sec. 261.24 using any applicable methods prescribed therein; 40 CFR 260.22(c)(2) Based on a complete application, the Administrator must determine, where he has a reasonable basis to believe that factors (including additional constituents) other than those for which the waste was listed could cause the waste to be hazardous waste, that such factors do not warrant retaining the waste as a hazardous waste. A waste which is so excluded, however, still may be a hazardous waste by operation of subpart C of part 261. (d)(2) Based on a complete application, the Administrator must determine, where he has a reasonable basis to believe that factors (including additional constituents) other than those for which the waste was listed could cause the waste to be a hazardous waste, that such factors do not warrant retaining the waste as a hazardous waste; 40 CFR 260.22(d)(3) The petitioner must demonstrate that the waste does not exhibit any of the characteristics defined in Sec. 261.21, Sec. 261.22, Sec. 261.23, and Sec. 261.24 using any applicable methods prescribed therein; 40 CFR 260.22(d)(4) A waste which is so excluded, however, still may be a hazardous waste by operation of subpart C of part 261. 40 CFR 260.22(e)(3) The petitioner must demonstrate that the waste does not exhibit any of the characteristics defined in Sec. 261.21, Sec.	

	261.22, Sec. 261.23, and Sec. 261.24 using any applicable methods prescribed therein;	
WAC 173-303-072(4) Additional bases for exempting listed wastes. In addition to the demonstrations required by subsections (3)(a) and (b) of this section, for wastes listed in WAC 173-303-081 or 173-303-082 the petitioner must also demonstrate to the satisfaction of the department that his waste is not capable of posing a substantial present or potential threat to public health or the environment when improperly treated, stored, transported, disposed of or otherwise managed. The following factors will be considered by the department when assessing such a demonstration:		no response required
no equivalent state citation	40 CFR 260.22(d) If the waste is listed with code ``T" in subpart D 40 CFR 260.22(d)(1) The petitioner must demonstrate that the waste	no response required
WAC 173-303-072(4)(a) Whether or not the listed waste contains the constituent or constituents which caused it to be listed. (For the purposes of this subsection, the constituents referred to will include any of the dangerous waste constituents listed in WAC 173-303-9905);	40 CFR 260.22(d)(1)(i) Does not contain the constituent or constituents (as defined in Appendix VII of part 261 of this chapter) that caused the Administrator to list the waste, using the appropriate test methods prescribed in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11	Appendix B: IDENTIFICATION OF CONSTITUENTS TO BE DELISTED
no equivalent state citation	40 CFR 260.22(d)(1)(ii) Although containing one or more of the hazardous constituents (as defined in appendix VII of part 261) that caused the Administrator to list the waste, does not meet the criterion of Sec. 261.11(a)(3) when considering the factors used by the Administrator in Sec. 261.11(a)(3) (i) through (xi) under which the waste	no response required

	was listed as hazardous; and	
	40 CFR 261.11(a)(3)It contains any of the toxic constituents listed in appendix VIII and, after considering the following factors, the Administrator concludes that the waste is capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed:	no response required
WAC 173-303-072(4)(b) The nature of the threat posed by the waste constituent(s);	40 CFR 261.11(a)(3)(i) The nature of the toxicity presented by the constituent.	Appendix B: IDENTIFICATION OF CONSTITUENTS TO BE DELISTED
WAC 173-303-072(4)(c) The concentration of the constituent(s) in the waste;	40 CFR 261.11(a)(3)(ii) The concentration of the constituent in the waste.	Appendix C: 200 AREA EFFLUENT TREATMENT FACILITY DELISTING TREATABILITY ENVELOPE
WAC 173-303-072(4)(d) The potential of the constituent(s) or any degradation product of the constituent(s) to migrate from the waste into the environment under the types of improper management considered in (h) of this subsection;	40 CFR 261.11(a)(3)(iii) The potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in paragraph (a)(3)(vii) of this section.	2.1 FACILITY AND PROCESS DESCRIPTION "Additional information on the construction and operation of the LERF/ETF is provided in the *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste at the Hanford Facility* (Ecology 2001, Attachment 34, Chapter 4.0)"
WAC 173-303-072(4)(e) The persistence of the constituent(s) or any degradation product of the constituent(s);	40 CFR 261.11(a)(3)(iv) The persistence of the constituent or any toxic degradation product of the constituent.	See Evaluation of state-only criteria designation for 200 Area Effluent Treatment Facility (ETF) treated effluents (i.e. an evaluation performed to determine the applicability of state-only WT and WP codes pursuant to WAC 1273-303-100), which states that this is not a persistent waste, "Therefore, it is a reasonable and defensible conclusion that treated effluents that meet delisting criteria do not designate as state-only persistence criteria wastes."
WAC 173-303-072(4)(f) The potential for the constituent(s) or any degradation product of the constituent(s) to degrade into nonharmful constituents and the rate of degradation;	40 CFR 261.11(a)(3)(v) The potential for the constituent or any toxic degradation product of the constituent to degrade into non-harmful constituents and the rate of degradation.	The petition doesn't rely on degredation. The waste streams consist of inorganic salts and deionized water. The DRAS model addresses degredation and bioaccumulation.

WAC 173-303-072(4)(g) The degree to which the constituent(s) or degradation product of the constituent(s) bioaccumulates in ecosystems;	40 CFR 261.11(a)(3)(vi) The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems.	The DRAS model addresses degredation and bioaccumulation.
WAC 173-303-072(4)(h) The plausible types of improper management to which the waste could be subjected;	40 CFR 261.11(a)(3)(vii) The plausible types of improper management to which the waste could be subjected.	2.1 FACILITY AND PROCESS DESCRIPTION "Additional information on the construction and operation of the LERF/ETF is provided in the *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste at the Hanford Facility* (Ecology 2001, Attachment 34, Chapter 4.0)"
WAC 173-303-072(4)(i) The quantities of the waste generated at individual generation sites or on a statewide basis. Under this factor, the department will also consider whether or not the waste is listed under WAC 173-303-081 as a discarded chemical product and occurs in a relatively pure form. Any waste discarded chemical product which exceeds the quantity exclusion limit specified in WAC 173-303-081(2) for that waste will not be exempted;	40 CFR 261.11(a)(3)(viii) The quantities of the waste generated at individual generation sites or on a regional or national basis.	1. 4 DESCRIPTION OF PROPOSED DELISTING ACTION "The proposed action also includes increasing the annual ETF treated effluent volume limit to 210 million liters per year. This volume limit is based on the ETF design capacity of 570 liters per minute and a total operating efficiency of 70 percent (accounting for planned maintenance outages and other down time). In addition, the delisting action requests delisting for 1.2 million liters per year of ETF concentrated waste (i.e., powders and evaporator brine) resulting from processing existing and projected wastewaters. (The LERF/ETF processes and resulting treated effluent and concentrated waste are discussed further in Section 2.0.)"
WAC 173-303-072(4)(j) The nature and severity of the public health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent(s);	40 CFR 261.11(a)(3) (ix) The nature and severity of the human health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent.	N/A None has occurred.
WAC 173-303-072(4)(k) Actions taken by other governmental agencies or regulatory programs based on the health or environmental threat posed by the waste or waste constituent(s); and	40 CFR 261.11(a)(3) (x) Action taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituent.	*200 Area Effluent Treatment Facility Delisting Petition*, Revision 1, DOE/RL-92-72, 1993 (Petition section 4.0) Hanford RCRA permit, WA7890008967,

		Attachment 34 (Permit section 2.0) 216 Permit, *State Waste Discharge Permit Number ST 4500* (Petition section 1.5) *Application for Risk-Based Disposal Approval for Polychlorinated Biphenyls*, DOE/RL-2002-02, Revision 0, 2002
WAC 173-303-072(4)(l) Such other factors as may be appropriate.	40 CFR 261.11(a)(3) (xi) Such other factors as may be appropriate. Substances will be listed on appendix VIII only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms. (Wastes listed in accordance with these criteria will be designated Toxic wastes.) 40 CFR 260.22(j) After receiving a petition for an exclusion, the Administrator may request any additional information which he may reasonably require to evaluate the petition.	no response required
no equivalent state citation	40 CFR 260.22(k) An exclusion will only apply to the waste generated at the individual facility covered by the demonstration and will not apply to waste from any other facility. 40 CFR 260.22(l) The Administrator may exclude only part of the waste for which the demonstration is submitted where he has reason to believe that variability of the waste justifies a partial exclusion.	no response required

Evaluation of state-only criteria designations for 200 Area Effluent Treatment Facility (ETF) treated effluents

One of the outstanding technical questions identified during Ecology review of the 200 Area ETF delisting draft proposal was whether wastes (treated effluent, concentrated waste) which might be excluded from the federal/authorized state RCRA program would exhibit state-only criteria designations. As a means to quantitatively evaluate this question, I have prepared spreadsheets to calculate the applicability of state-only WT and WP codes pursuant to WAC 173-303-100.

State-only Toxic Criteria

For the WT (toxicity) code, the spreadsheet includes all constituents identified in the draft proposed rule as verification constituents. For each constituent, the toxic category is calculated according to book designation procedure methodology in WAC 173-303-100(5)(b). Assuming each verification constituent is present in the excluded waste at the delisting level, the contribution of each constituent to the total equivalent concentration is calculated by dividing the proposed delisting level by the toxic category divisor specified in WAC 173-303-100(5(b)(ii). Finally, the contribution of each constituent is summed to calculate the equivalent concentration of the waste stream.

The spreadsheet methodology is intended to be a conservative, worst-case evaluation, based on two key assumptions. First, it is assumed that ALL verification constituents are present at the proposed delisting level. This is considered bounding, in that it is highly unlikely that all constituents (even a substantial majority) would ever be present in the treated effluent at the delisting level. This is confirmed by historical data accumulated pursuant to the verification sampling requirements of the existing delisting, and the ST4500 discharge permit.

Second, where toxicity values for multiple chemical forms or cogeners of a verification constituent are provided, the most toxic form or congener is selected. In the case of PCBs, all PCBs are assumed to be the most toxic Aroclor 1248. In the case of metals, where toxicity for the parent metal as well as the chloride form is provided, the most toxic category is selected. There is no evidence to suggest that any metals are present in treated effluent in the chloride form, so were a chloride form is more present than the parent metal, this assumption is conservative and bounding. In fact, the chemistry of ETF treatment strongly suggests that any metal halides would likely be converted to oxide forms in the UV/OX treatment process. Therefore, to the extent that metal chloride toxicity is greater than the parent metal form, the conservative selection of toxicity values is bounding.

When individual contributions to the waste stream equivalent concentration are summed, the equivalent concentration, a value of 0.0002 wt. percent is obtained. This is significantly lower than the designation threshold of 0.001 wt. percent. Therefore, it is a reasonable and defensible conclusion that treated effluents that meet delisting criteria do not designate as state-only toxic criteria wastes.

State-only Persistence Criteria

For the persistence criteria codes, a similar spreadsheet analysis has been performed. This spreadsheet contains only those verification constituents that are either halogenated organic compounds (HOCs) or polycyclic aromatic hydrocarbons (PAHs) for evaluating the applicability of the WP01 and WP02 codes, and polycyclic aromatic codes. This spreadsheet calculates the weight percent of each such compound based on the assumption that the verification constituent is present in the treated effluent at the delisting level. Further, the spreadsheet assumes that all other compounds represented in the treatability group are also present at the same concentration – in other words, the weight percent of the representative constituent is multiplied by the number of compounds in that treatability group. The spreadsheet then sums this product for each of the PAH and HOC groups. It should be noted that this assumption that all constituents within the PAH and HOC treatability groups are present at the concentration of the verification constituent is highly conservative. For example, treatability group eleven contains 81 compounds – it is not plausible that all 81 compounds would be present in treated effluents at the verification constituent concentration.

Based on these calculations, the following results are obtained and compared to the designation levels of WAC 173-303-100(6):

Constituent class	Calculated total (wt. %)	Designation level (wt. %)
Polyaromatic hydrocarbons	0.0193	1.0
Halogenated organic compounds	0.00098	0.01

For both PAHs and HOCs, the very conservative bounding concentrations are well below the designation level. Therefore, it is a reasonable and defensible conclusion that treated effluents that meet delisting criteria do not designate as state-only persistence criteria wastes.

Treatability group	Proposed delisting constituents	CAS #	Proposed delisting level (mg/l)	Fish LC50 (mg/L)	Oral (Rat) LD50 (mg/kg)	Inhalation (Rat) LC50 (mg/L)	Dermal (Rabbit) LD50 (mg/kg)	Toxicity Category	WT divisior	Equivalent Concentration (mg/l)	
1	Cresol [Cresylic acid]*	1319-77-3	1.2	12.8, E	1454, R	NA	2000, R	D	10000	0.00012	
2	2,4,6-trichlorophenol	88-06-2	0.36	0.45, E	820, R	NA	NA	B	100	0.0036	
3, 15, 15a	Benzene*	71-43-2	0.06	2.5, E	930, R	NA	>8260, R	C	1000	0.00006	
4	Chrysene	218-01-9	0.56	NA	NA	NA	NA	NA			
5, 5a, 16	Hexachlorobenzene	118-74-1	0.002	50, H	3500, R	3.6, R	NA	C	1000	0.000002	
6b, 14	Hexachlorocyclopentadiene	77-47-4	0.18	0.0067, E	300, H	0.018, R	430, R	X	1	0.18	
7a	Dichloroisopropyl ether [Bis(2□Chloroisopropyl) ether]	108□60□1	0.06	NA	240, R	12.9, H	3309, R	C	1000	0.00006	
8	Di-n-octylphthalate*	117□84□0	0.48	0.00618, H	30000, H	NA	NA	X	1	0.48	
9a	1-Butanol*	71□36□3	2.4	1630, E	790, R	24, R	3400, R	D	10000	0.00024	
9	Isophorone	78-59-1	4.2	145, E	1000, H	7.0, H	1500, H	C	1000	0.0042	
10a	Diphenylamine	122-39-4	0.56	3.79, E	1120, R	NA	NA	C	1000	0.00056	
10b	p-Chloroaniline	106-47-8	0.12	11, E	200, H	2.34, R	360, R	C	1000	0.00012	
10c	Acetonitrile	75-05-8	1.2	1000, E	175, H	NA	980, H	C	1000	0.0012	
10d	Carbazole	86□74□8	0.18	0.93, E	>5000, H	NA	NA	B	100	0.0018	
10e	N-Nitrosodimethylamine	62-75-9	0.02	940, E	27, H	0.24, R	NA	B	100	0.0002	
10f	Pyridine	110-86-1	0.004	1.1, E	800, H	12.9, H	1121, R	C	1000	0.000004	
11	Lindane [gamma-BHC]	58-89-9	0.003	0.0017, H	76, H	NA	50, H	X	1	0.003	
12	Aroclor 1016, 1221, 1232, 1242, 1248, 1254, 1260	PCBs 1336-36-3	0.0005	0.305, E	4000, R	NA	NA	B	100		
12	Aroclor 1016	12674-11-2		0.134, H	2300, R	NA	NA	B	100		
12	Aroclor 1221	11104-28-2		1.17, E	3980, R	NA	NA	D	10000		
12	Aroclor 1232	11141-16-5		1.9, E	4470, R	NA	4470, H	C	1000		
12	Aroclor 1242	53469-21-9		0.010, E	794, H	NA	8650, H	A	10		
12	Aroclor 1248	12672-29-6	0.0005	0.0034, E	11000, R	NA	11000, H	X	1	0.0005	

12	Aroclor 1254	11097-69-1		0.142, E	1010, R	NA	NA	B	100		
12	Aroclor 1260	11096-82-5		0.021, E	1300, H	NA	1300, H	A	10		
13, 6a	Carbon tetrachloride*	56□23□5	0.018	1.97, H	2350, R	50.3, R	>20000, R	C	1000	0.000018	
18a	Tetrahydrofuran	109-99-9	0.56	10, E	1650, R	53.1, H	NA	D	10000	0.000056	
19	Acetone*	67-64-1	2.4	4376, E	5800, R	NA	NA	NA			
20	Carbon disulfide	75-15-0	2.3	4, E	1200, R	1, R	NA	B	100	0.023	
21, 22	Barium*	7440-39-3	1.6	>500, E	NA	NA	NA	NA			
21, 22	Barium Chloride	10361-37-2		42.7, E	118, R	NA	NA	C	1000	0.0016	
21, 22	Beryllium*	7440-41-7	0.045	0.150, H	NA	NA	NA	B	100	0.00045	
21, 22	Beryllium Chloride	7787-47-5		0.380, E	9.7, H	NA	NA	B			
21, 22	Nickel*	7440-02-0	0.08	0.050, E	NA	NA	NA	A	10	0.008	
21,22	Nickel Chloride	7718-54-9		0.050, E	681, R	NA	NA	A			
21, 22	Silver*	7440-22-4	0.11	0.0062, E	>5000, H	NA	NA	X	1	0.11	
21, 22	Silver Chloride	7783-90-6		0.50, E	NA	NA	NA	B			
21, 22	Vanadium*	7440-62-2	0.16	0.160, E	NA	NA	NA	B	100	0.0016	
21,22	Vanadium Chloride	7632-51-1		NA	NA	NA	NA	NA			
21, 22	Zinc*	7440-66-6	6.8	0.24, E	NA	NA	NA	B			
21, 22	Zinc Chloride	7646-85-7		0.066, E	350, R	NA	NA	A	10	0.68	
21, 22	Arsenic*	7440-38-2	0.015	9.9, E	763, R	NA	NA	D			
21, 22	Arsenic Chloride	7784-34-1		NA	48, R	NA	NA	B	100	0.00015	
21, 22	Cadmium*	7440-43-9	0.011	0.0021, E	225, H	0.025, R	NA	X	1	0.011	
21,22	Cadmium Chloride	10108-64-2		0.0009, E	88, R	NA	NA	X			
21, 22	Chromium*	7440-47-3	0.068	100, E	NA	NA	NA	D			
21, 22	Chromium Chloride	10025-73-7		9.9, E	440, R	NA	NA	C			
21,22	Chromium Trioxide	1333-82-0		0.18, E	25, H	0.087, H	30, H	A	10	0.0068	
21, 22	Lead*	7439-92-1	0.09	0.20, E	NA	NA	NA	B	100	0.0009	
	Lead Chloride	7758-95-4		0.18, E	>1947, R	NA	NA	B			
21, 22	Mercury*	7439-97-6	0.0068	0.005, E	NA	NA	NA	X	1	0.0068	
21, 22	Mercury Chloride	7487-94-7		0.005, E	1, R	NA	NA	X			
21, 22	Selenium*	7782-49-2	0.11	5.0, E	6700, R	NA	NA	D	10000	0.000011	
21, 22	Selenium Chloride	7791-23-3		NA	NA	NA	NA	NA			

23	Fluoride*	16984-48-8	1.2	125, E	NA	NA	NA	NA			
23	Sodium Fluoride	7681-49-4		0.317, E	31, R	NA	NA	B	100	0.012	
24	Ammonia*	7664-41-7	6	0.068, H	350, H	1.39, R	NA	A	10	0.6	
24	Cyanide*	57-12-5	0.48	0.120, E	NA	NA	NA	B			
24	Sodium Cyanide	143-33-9		0.0463, E	4.7, R	NA	10.4, R	A	10	0.048	
25a	Tributyl phosphate*	126-73-8	0.12	4.2, E	3000, R	28, R	>3100, R	D	10000	0.000012	
Individual Aroclors, selected metal chlorides, chromium trioxide, sodium fluoride, and sodium cyanide were added to better characterize toxicity										2.186063	mg/kg
										2.18606E-06	wt. fraction
Fish data hierarchy: Salmonid>Fathead Minnow>Other Fish Species (WAC 173-303-100)										0.000218606	wt. percent
Fish LC50 ≥24 hrs, Rat Inhalation LC50 ≤4 hrs, Rabbit Dermal LD50 =24 hrs (WAC 173-303-100)											
Databases used: RTECS (rat, rabbit), HSDB (rat, rabbit, fish), ECOTOX (fish)										0.0002 is less than 0.001	
										Not a toxic dangerous waste	
R=Registry of Toxic Effects of Chemical Substances (RTECS), National Institute of Occupational Safety and Health (NIOSH).											
http://ccinfoweb.ccohs.ca/rtecs/search.html											
H=Hazardous Substances Data Bank (HSDB), National Library of Medicine (NLM).											
http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB											
E=Ecotoxicology Database (ECOTOX), Environmental Protection Agency (EPA).											
http://www.epa.gov/ecotox/											
NA=Not Available											

Treatability group	Proposed delisting constituents	CAS #	Proposed delisting level (mg/l)	Chemical Class	Compound count	HOC wt.%	Treatability group total	PAH wt.%	Treatability group total
2	2,4,6-trichlorophenol	88-06-2	0.36	HOC	14	0.000036	0.000504		
4	Chrysene	218-01-9	0.56	PAH	19			0.000056	0.001064
5, 5a, 16	Hexachlorobenzene	118-74-1	0.002	HOC	20	0.0000002	0.000004		
6b, 14	Hexachlorocyclopentadiene	77-47-4	0.18	HOC	16	0.000018	0.000288		
7a	Dichloroisopropyl ether [Bis(2□Chloroisopropyl) ether]	108□60□1	0.06	HOC	9	0.000006	0.000054		
9	Isophorone	78-59-1	4.2	PAH	41			0.00042	0.01722
10b	p-Chloroaniline	106-47-8	0.12	HOC	5	0.000012	0.00006		
10d	Carbazole	86□74□8	0.18	PAH	54			0.000018	0.000972
11	Lindane [gamma-BHC]	58-89-9	0.003	HOC	81	0.0000003	2.43E-05		
12	Aroclor 1016, 1221, 1232, 1242, 1248, 1254, 1260	PCBs 1336-36-3	0.0005						
12	Aroclor 1016	12674-11-2							
12	Aroclor 1221	11104-28-2							
12	Aroclor 1232	11141-16-5							
12	Aroclor 1242	53469-21-9							
12	Aroclor 1248	12672-29-6	0.0005	HOC	1	5E-08	5E-08		
12	Aroclor 1254	11097-69-1							
12	Aroclor 1260	11096-82-5							
13, 6a	Carbon tetrachloride*	56□23□5	0.018	HOC	27	0.0000018	4.86E-05		
					HOC total (wt. %)		0.000983		
					PAH total (wt. %)				0.019256
Individual Aroclors, selected metal chlorides, chromium trioxide, soc				mg/kg					
				wt. fraction					
Fish data hierarchy: Salmonid>Fathead Minnow>Other Fish Specie				wt. percent					
Fish LC50 ≥24 hrs, Rat Inhalation LC50 ≤4 hrs, Rabbit Dermal LD50 =24 hrs (WAC 173-303-100)									
Databases used: RTECS (rat, rabbit), HSDB (rat, rabbit, fish), ECOTOX (fish)									
R=Registry of Toxic Effects of Chemical Substances (RTECS), National Institute of Occupational Safety and Health (NIOSH).									
http://ccinfoweb.ccohs.ca/rtecs/search.html									
H=Hazardous Substances Data Bank (HSDB), National Library of Medicine (NLM).									
http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB									
E=Ecotoxicology Database (ECOTOX), Environmental Protection Agency (EPA).									
http://www.epa.gov/ecotox/									
NA=Not Available									

ENVIRONMENTAL PROTECTION AGENCY
40 CFR PART 261
[SW-FRL-]

HAZARDOUS WASTE MANAGEMENT SYSTEM; PROPOSED EXCLUSION FOR IDENTIFYING AND LISTING HAZARDOUS WASTE

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule and request for comment.

SUMMARY: The EPA (also, 'the Agency' or 'we') is proposing to grant two petitions submitted by the United States Department of Energy, Richland Operations Office (DOE-RL) to exclude (or 'delist') certain mixed wastes ('petitioned wastes') from the lists of hazardous waste contained in Subpart D of 40 Code of Federal Regulations (CFR) Part 261 that are treated or generated at the 200 Area Effluent Treatment Site (200 Area ETF) on the Hanford Facility, Richland, Washington. Federal regulations (40 CFR 260.22) provide facilities the opportunity to petition the EPA to exclude waste on a facility-specific basis from the hazardous waste lists.

The Agency proposes to conditionally grant the exclusions based on an evaluation of specific waste stream and treatment process information provided by the DOE-RL. These proposed decisions, if finalized, would conditionally exclude the petitioned wastes from the requirements of hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA) of 1976 as amended.

If today's proposal is finalized, we will have concluded that DOE-RL's petitioned wastes do not meet any of the criteria under which the wastes were listed, and that there is no reasonable basis to believe other factors exist which could cause the waste to be hazardous.

DATES: Comments. We will accept public comments on this proposed decision until [Insert date 45 days after publication in the Federal Register (FR)]. We will stamp comments postmarked after the close of the comment period as 'late'. These 'late' comments might not be considered in formulating a final decision.

Request for Public Hearing. Your request for a hearing must reach EPA by [Insert date 15 days after publication in the Federal Register]. The request must contain the information prescribed in Section 260.20(d).

ADDRESSES: Comments. Please send two copies of your comments to Dave Bartus, EPA Region 10, 1200 6th Avenue, MS WCM-127, Seattle, WA 98101. Electronic comments can be e-mailed to bartus.dave@epa.gov.

Request for Public Hearing. Any person can request a hearing on this proposed decision by filing a written request with Rick Albright, Director, Office of Waste and Chemicals Management, EPA Region 10, 1200 6th Ave., MS WCM-127, Seattle WA, 98101.

Docket. The RCRA regulatory docket for this proposed rule is maintained by EPA, Region 10. You may examine docket materials at the EPA Region 10 library, 1200 6th Avenue, Seattle, WA 98101, (206) 553-1289, during the hours from 9:00 a.m. to 4:00 p.m., Monday through Friday, excluding Federal holidays. Copies of the docket are available for review at the following Hanford Site Public Information Repository locations:

University of Washington
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echase@u.washington.edu
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Foley Center
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Spokane, WA 99258-0001
(509) 323-3839
Contact: Stephanie Plowman
plowan@its.gonzaga.edu

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Contact: Michael Bowman
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WSU-TC
CIC Room 101L
2770 University Drive
Richland, WA 99352
(509) 372-7443
Contact: Terri Traub
reading_room@pnl.gov

Copies of material in the regulatory docket can be obtained by contacting the Hanford Site Administrative Record via mail, phone, fax, or E-mail:

Address: Hanford Site Administrative Record
PO Box 1000
MSIN H6-08
2440 Stevens Center Place
Richland, WA 99352
Phone: (509) 376-2530

FOR FURTHER INFORMATION CONTACT: For technical information concerning this document, contact Dave Bartus, EPA, Region 10, 1200 6th Avenue, MS WCM 127, Seattle, WA 98101, telephone (206) 553-2804, or via e-mail at bartus.dave@epa.gov.

SUPPLEMENTARY INFORMATION: The information in this section is organized as follows:

I Overview Information

A. What Action is EPA proposing?

The EPA is proposing two delisting actions related to mixed[1] waste managed or generated by the 200 Area ETF on the Hanford Facility in Richland, Washington. The first action relates to treated liquid effluents produced by the 200 Area ETF, which were first delisted in June 1995. A description of the influents to the 200 Area ETF considered in the original delisting, and how the original delisting was developed, may be found in the original proposed rule, 60 FR 6054, February 1, 1995. EPA is proposing to modify this existing delisting by increasing the annual quantity of waste delisted to conform to the expected full treatment capacity of the 200 Area ETF. In addition, EPA is proposing to expand the list of constituents associated with hazardous waste number F039 (multisource leachate) for which 200 Area ETF treated effluent is delisted, from the current F001 to F005 constituents to all constituents for which F039 waste is listed.[2] This change will allow ETF to fulfill its anticipated future missions, which include treating mixed wastewaters from a number of additional sources beyond 242-A Evaporator process condensate (PC) upon which the original delisting was based. Finally, EPA is proposing to expand the list of hazardous waste numbers for which treated effluent is delisted to include certain wastewater forms of U- and P-listed wastes. In particular, these U- and P-listed waste numbers are those whose chemical constituents are included in the list of hazardous constituents for which F039 was listed (see 40 CFR Part 261, Appendix VII). This latter addition is intended to accommodate possible management of U- and P-listed wastewaters from spill cleanup or decontamination associated with management of these wastes at the Central Waste Complex (CWC) or other storage facilities. These spill cleanup wastes include exactly the same constituents that will eventually contribute to F039 when the source wastes are land disposed, so today's analysis of expanding the 200 Area ETF treated effluent to include F039 applies equally to the wastewater forms of the same chemical constituents in their U- and P-listed waste forms. This action will allow the 200 Area ETF to fulfill an expanded role in supporting Hanford Facility cleanup actions beyond those activities considered in the 1995 delisting rulemaking. Further details of how hazardous waste numbers are applied to 200 Area ETF treated effluent can be found in Section II.A of today's proposal. Further details about 200 Area ETF treated effluent and how it is generated can be found in Section III.A

The second action is to newly exclude (delist) a treatment residual (secondary) waste stream generated by operation of the 200 Area ETF. This waste stream, known as 200 Area ETF concentrated waste, consists of solids and brine from regeneration of ion exchange (IX) columns,

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[1]Mixed waste is defined as waste that contains both hazardous waste subject to the requirements of Resource Conservation and Recovery Act (RCRA) of 1976 and source, special nuclear, or by-product material subject to the requirements of the Atomic Energy Act (AEA) [refer to 42 U.S.C. § 6903 (41), added by the Federal Facility Compliance Act (FFCA) of 1992].

[2]Today's proposal is not modifying the list of constituents for which F039 multisource leachate is listed. At the time of the original delisting, DOE-RL did not expect to manage F039 wastes at the 200 Area ETF from sources other than F001-F005 wastes. Therefore, the original 200 Area ETF delisting excluded only F039 wastes from F001-F005 sources. However, this period is automatically extended during the course of any unresolved enforcement action regarding the 200 Area ETF or as requested by EPA.

concentrate from reverse osmosis (RO) treatment units, and filter backwash. This waste stream could be either solid or liquid, depending on whether the waste is processed through a thin-film dryer. The waste stream currently is regulated as a listed waste as a treatment residual under the "derived-from" rule [see 40 CFR 261.3(c)(2)(i) and Washington Administrative Code (WAC) 173-303-082(1)]. The DOE-RL believes that the 200 Area ETF concentrated waste residuals from treatment of some, but not all, liquid effluents do not meet the RCRA criteria for which the EPA originally listed these wastes, and thus are candidates for exclusion. The DOE-RL's proposal to conditionally exclude portions of this waste stream includes a methodology to differentiate portions of this waste stream that will be managed under an exclusion and those portions that will continue to be fully regulated under Subtitle C of RCRA. Further details of how hazardous waste numbers are applied to 200 Area ETF concentrated waste can be found in Section II.A of today's proposal. Further details about 200 Area ETF concentrated waste and how it is generated can be found in Section IV.A.

The DOE-RL petitioned EPA to exclude (delist) the treated liquid effluent and certain treatment residues resulting from the treatment of liquid mixed waste at the 200 Area ETF because DOE-RL believes that the petitioned waste does not meet the RCRA criteria for which EPA originally listed the petitioned waste. The DOE-RL also believes there are no additional constituents or factors that could cause the waste to be a hazardous waste or warrant retaining the waste as hazardous waste.

Based on our review described in today's proposal, we agree with the petitioner that the identified treated liquid effluents and identified solid treatment residuals are non-hazardous with respect to the original listing criteria. Furthermore, we find no additional constituents or factors that could cause either waste stream to be a hazardous waste or warrant retaining the waste as a hazardous waste. If our review had found that the waste remained a hazardous waste based on the factors for which the waste originally was listed, or if we found additional constituents or factors that could cause either waste stream to be a hazardous waste or warrant retaining the waste as a hazardous waste we would have proposed to deny the petition. It is important to note that even if the waste becomes delisted, the DOE-RL remains responsible for complying with the Atomic Energy Act (AEA), as the treated effluents will generally remain regulated as low-level radioactive wastes under the existing or today's proposed exclusion. Further, disposal of the treated liquid effluent on site is regulated by the Washington State Department of Ecology (Ecology) under the authority of WAC 173 216. Further details of how treated effluent and concentrated wastes will be managed if excluded under today's proposal may be found in Section I.C below.

B. Why is EPA proposing to approve these delistings?

We believe that the petitioned wastes should be conditionally delisted because the wastes, when managed in accordance with today's proposed conditions, do not meet the criteria for which the wastes originally were listed and the wastes do not contain other constituents or factors that could cause either waste stream to be a hazardous waste or warrant retaining the waste as a hazardous waste. Our proposed decision to delist the petitioned wastes is based on information submitted by DOE-RL, including the description of the wastewaters managed by the ETF and their original

generating sources, the ETF treatment processes, and the analytical data characterizing performance of the 200 Area ETF.

In reviewing this petition, we considered the original listing criteria and the additional factors required by the Hazardous and Solid Waste Amendments (HSWA) of 1984 [refer to 222 of HSWA, 42 USC 6921(f), and 40 CFR 260.22 (d)(2) through (4)]. These factors included (1) whether the wastes are considered acutely toxic; (2) the toxicity of the constituents; (3) the concentration of the constituents in the wastes; (4) the tendency of the hazardous constituents to migrate and to bioaccumulate; (5) persistence of the constituents in the environment once released from the wastes; (6) plausible and specific types of management of the petitioned wastes; (7) the quantity of wastes produced; and (8) variability of the wastes. We also evaluated the petitioned waste against the listing criteria and factors cited in Sections 261.11(a)(1),(2) and (3).

C. How will DOE RL manage the wastes if the wastes are delisted?
Treated Effluents

Treated liquid effluents discussed in this proposal currently are land disposed at the State Authorized Land Disposal Site (SALDS) as non-hazardous waste under the current delisting applicable to this waste stream.[3] Treated effluent will continue to be disposed of at SALDS, as a condition of today's proposal. A brief description of the SALDS can be found in the DOE-RL application for the State Waste Discharge Permit ST 4500, and the permit fact sheet available at http://www.ecy.wa.gov/programs/nwp/pdf/4500dfs.pdf. EPA's original evaluation of this disposal unit with respect to delisting is found at 60 FR 6061 (February 1, 1995). The DOE-RL's petition for modification of the existing delisting does not reflect any change in design and operation of the SALDS compared to DOE-RL's original delisting petition and EPA's associated analysis. We note that this proposed exclusion is not dependant on the characteristics or protectiveness of effluent disposal at the SALDS. The fact that DOE-RL is not proposing management of excluded treated effluent other than at the SALDS; however, does provide a basis for the EPA to conclude that it is not necessary to consider other risk or exposure pathways in today's proposal beyond those considered in the original delisting rulemaking applicable to treated effluents.

In the November 2001 petition, DOE-RL noted that in the future the delisted treated effluent from 200 Area ETF could be used as makeup water at onsite facilities that have a demand for large quantities of demineralized water. Delisted effluent, however, contains appreciable amounts of tritium and must be managed to minimize personnel exposure and the potential for release. EPA encourages DOE-RL to pursue potential alternate uses of 200 Area ETF liquid

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[3]The SALDS disposal site is an effluent infiltration gallery, consisting of a 116 foot by 200 foot rectangular drainfield with 4 inch porous pipe laterals coming off an 8 inch diameter header at 6 foot intervals. The drainfield pipes are 6 inches below the surface of a 6 foot deep gravel basin. The gravel basin is covered by a layer of native soil at least 12 inches deep. See http://www.ecy.wa.gov/programs/nwp/pdf/4500dfs.pdf. For purposes of developing delisting exclusion limits in the original 200 Area ETF exclusion and in today's proposal, EPA considers the SALDS unit to be functionally equivalent to a surface impoundment.

effluents, and believes that, in general, such practices would prove to be fully protective, and a means to further the Hanford Site cleanup mission. Because no specific proposals have been made by DOE-RL, however, EPA lacks information to specifically evaluate impacts of such reuse practices with respect to delisting criteria, or whether such practice would identify other factors that would need to be considered in a delisting decision. Today's proposed rulemaking is based on continued disposal of treated effluents at the SALDS, but does include a provision whereby DOE-RL could request EPA to evaluate treated liquid effluent reuse proposals. If EPA finds, through this review, that delisting conditions in place at the time of the request ensure that the treated effluent is managed protectively with respect to delisting criteria, EPA may allow DOE-RL to commence the proposed activity without changes to the delisting rule. Otherwise, EPA could require the DOE-RL to submit a revised delisting petition, and new delisting conditions would need to be established to reflect the new proposed disposal/use activity.[4]

Secondary Wastes

Solid treatment residuals (powder) from 200 Area ETF operations currently are managed as mixed waste. Depending on radionuclide or other chemical properties, secondary waste in brine form might be stabilized (treated by mixing with Portland cement or other stabilizing agent) and disposed in a solidified form. Typically, a decision to stabilize evaporator brine is made on the basis of radionuclide mobility and activity, not as a result of hazardous waste disposal criteria. When stabilization is not necessary to address radionuclides, the brine secondary waste is processed further in the thin film dryer to a dry powder form and disposed in that form. DOE-RL's decisions regarding whether or not to stabilize brine or to process concentrated wastes in the thin-film dryer are based typically on factors other than hazardous constituent content or upon DOE-RL's requirements (more specifically, radionuclide or non-hazardous constituent content) and are not considered as part of this delisting proposal. Further, the DOE-RL is not proposing to delist stabilized brine on the basis of stabilization as a form of hazardous waste treatment. Rather, the DOE-RL is proposing to manage concentrated waste brine that will be solidified under this delisting action only if the brine meets delisting criteria before solidification. This is a conservative approach, because neither the ability of the solidification matrix to immobilize hazardous constituents or the potential of solidification reagents to dilute hazardous constituents needs to be considered with respect to meeting delisting criteria.
Powders or solidified brine generated from treatment of liquid effluents are currently disposed of in units at the Hanford facility. If excluded under today's proposed action, these concentrated wastes could be disposed on the Hanford Site as low-level waste. Solids not excluded under today's rulemaking would have to be disposed as mixed waste after demonstrating compliance with applicable treatment under the Land Disposal Restriction (LDR) program (40 CFR Part 268). While not a basis for today's proposal, EPA notes that by establishing a regulatory pathway for disposal of selected concentrated wastes as low-level waste, considerable cost

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[4]As noted elsewhere in this proposal, delisting requirements that could be established as a result of this proposal are not effective in authorized states until the states adopt and receive final authorization for the delisting rulemaking. Any changes in reuse/disposal practices for treated liquid effluent would have to comply with applicable state rules and be made in consultation with and subject to the approval of the appropriate state agency, in this case, most likely the Washington State Department of Ecology.

savings and gains in operational flexibility at the 200 Area ETF are anticipated. These cost savings and increased operational flexibility should help accelerate progress toward meeting Hanford Site cleanup goals.

D. When would EPA finalize the proposed delisting exclusions?

RCRA Section 3001, 42 USC 6921(f) specifically requires the EPA to provide notice and an opportunity for comment before granting or denying a final exclusion. Thus, EPA will not make a final decision to grant an exclusion until the EPA has addressed all timely public comments (including any at public hearings) on today's proposal.

RCRA Section 3010(b)(1), 42 USC 6930(b)(1) allows rules to become effective in less than six months when the regulated community does not need the six-month period to come into compliance with the new regulatory requirements. EPA believes that today's proposed exclusion, if finalized, would reduce existing regulatory requirements, so that a six-month period is no necessary for DOE-RL to come into compliance. As a result, EPA believes that, if finalized, today's proposal should be effective immediately upon final publication, and a later date would impose unnecessary hardship and expense on the petitioner. These reasons also provide good cause for making this rule effective immediately upon final publication under the Administrative Procedures Act, 4 USC 553(d). See also Section II.B for a discussion of today's proposal on state regulatory programs.

II Background

A. What laws and regulations give EPA the authority to delist wastes?

On January 16, 1981, as part of the final and interim final regulations implementing Section 3001 of RCRA, EPA published an amended list of hazardous wastes from non-specific and specific sources. EPA has amended this list several times as published in 40 CFR 261.31 and 261.32. EPA lists these wastes as hazardous because (1) the wastes exhibits one or more of the characteristics of hazardous wastes identified in Subpart C of Part 261 (that is, ignitability, corrosivity, reactivity, and toxicity) or (2) the wastes meets the criteria for listing contained in Section 261.11(a)(2) or (a)(3).

Individual waste streams could vary, depending on raw materials, industrial processes, and other factors. Thus, while a waste that is described in these regulations generally is hazardous, a specific waste from an individual facility meeting the listing description might not be hazardous.

For this reason, Sections 260.20 and 260.22 provide an exclusion procedure, allowing persons to demonstrate that a specific waste from a particular generating facility[5] should not be regulated as a hazardous waste.

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[5]Although no one produces hazardous waste without good reason, many industrial processes result in the production of hazardous waste, as well as useful products and services. A 'generating facility' is a facility in which hazardous waste is produced, and a 'generator' is a person who produces hazardous waste or causes hazardous waste to be produced at a particular place. 40 CFR 260.10 provides regulatory definitions of "generator", "facility", "person", and other terms related to hazardous waste, and 40 CFR 262 provides regulatory requirements for generators.

To have their waste excluded, petitioners first must show that the waste generated at their facilities does not meet any of the criteria for which the waste was listed [refer to 40 CFR 260.22(a) and the background documents for the listed waste]. Second, the EPA Administrator must determine, where the Administrator has a reasonable basis to believe that factors (including additional constituents) other than those for which the waste was listed could cause the waste to be hazardous waste, that such factors do not warrant retaining the waste as hazardous waste. Accordingly, a petitioner also must demonstrate that the waste does not exhibit any of the hazardous waste characteristics (i.e., ignitability, reactivity, corrosivity, and toxicity), and must present sufficient information for the EPA to determine whether the waste contains any other toxicants at hazardous levels [refer to 40 CFR 260.22(a), 42 USC 6921(f), and the background documents for the listed waste]. Although waste that is "delisted" (i.e., excluded) has been evaluated to determine whether or not the waste exhibits any of the characteristics of hazardous waste, generators remain obligated under RCRA to determine whether or not their waste continues to be non-hazardous based on the hazardous waste characteristics (i.e., characteristics that might be promulgated subsequent to a delisting decision).

In addition, residues from the treatment, storage, or disposal of listed hazardous waste and mixtures containing listed hazardous waste also are considered hazardous waste [refer to 40 CFR 261.3(a)(2)(iv) and (c)(2)(i), referred to as the 'mixture' and 'derived-from' rules, respectively]. Such waste also is eligible for exclusion and remains hazardous waste until excluded. On December 6, 1991, the U.S. Court of Appeals for the District of Columbia vacated the 'mixture/derived-from' rules and remanded these rules to the EPA on procedural grounds [Shell Oil Co. v. EPA, 950 F.2d 741 (D.C. Cir. 1991)]. On March 3, 1992, EPA reinstated the mixture and derived-from rules, and solicited comments on other ways to regulate waste mixtures and residues (57 FR 7628). These rules became final on October 30, 1992 (57 FR 49278), and should be consulted for more information regarding waste mixtures and solid waste derived from treatment, storage, or disposal of a hazardous waste. The mixture and derived-from rules are codified in 40 CFR 261.3, paragraphs (a)(2)(iv) and (c)(2)(i).

On October 10, 1995, the EPA Administrator delegated to the EPA Regional Administrators the authority to evaluate and approve or deny petitions submitted by generators in accordance with 40 CFR 260.20 and 260.22 within their Regions (National Delegation of Authority 8-19) in states not yet authorized to administer a delisting program in lieu of the Federal program.

B. How would this action affect the states?

This proposed rule, if promulgated, would be issued under the federal (RCRA) delisting authority found at 40 CFR 260.22. States, however, are allowed to impose regulatory requirements that are more stringent than EPA's, pursuant to Section 3009 of RCRA. These more stringent requirements may include a provision that prohibits a federally issued exclusion from taking effect in the states. Because a petitioner's waste may be regulated under a dual system (i.e., both federal and state programs), petitioners are urged to contact state regulatory authorities to determine the current status of their wastes under the state laws. Furthermore, some states are authorized to administer a delisting program in lieu of the federal program, i.e., to make their own delisting decisions. Therefore, this proposed exclusion, if promulgated, would not apply in those authorized states. If the petitioned wastes will be transported to any state with

delisting authorization, the DOE-RL must obtain delisting authorization from that state before the wastes can be managed as non-hazardous in that state.

III EPA's Evaluation of the Waste Information and Data for Liquid Effluent Waste

A. What waste did DOE RL petition EPA to delist and how is the waste generated?

The original delisting action considered treatment of only one waste stream, process condensate from the 242-A Evaporator. Since promulgation of the original delisting, the operating mission of the 200 Area ETF has expanded considerably. Currently, the operating capacity of the 200 Area ETF is split among treatment of 242-A Evaporator PC, treatment of Hanford Site contaminated groundwater from various pump-and-treat systems, and a variety of other wastewaters generated from waste management and cleanup activities at Hanford.

As discussed in Section 3.0 of DOE-RL's November 2001 petition, the mission of the 200 Area ETF is to treat wastewater generated on the Hanford Facility from cleanup activities including multisource leachate from operation of hazardous/mixed waste landfills, and other hazardous wastewaters from a variety of sources including analytical laboratory operations, research and development studies, waste treatment processes, environmental restoration and deactivation projects, and other waste management activities. Based on this change in the 200 Area ETF mission, the DOE-RL has petitioned EPA to modify the existing delisting applicable to treated liquid effluents from the 200 Area ETF by increasing the effluent volume limit to 210 million liters per year, and to conditionally exclude treated effluents from treatment by the 200 Area ETF of certain liquid Hanford wastes with hazardous waste numbers identified at 40 CFR 261.31 and 261.33 as F039, and all U- and P-listed substances appearing in the listing definition of F039. Under the current delisting, the liquid effluent volume is limited to approximately 86 million liters per year, and delisted only for F039 constituents from F001 through F005 waste numbers.

The DOE-RL also is requesting to delist treated effluents for a number of U- and P-listed constituents. As explained in Section 3.1 of the November 2001 delisting petition, wastes bearing numbers P029, P030, P098, P106, P120, and U123, as well as other U- and P-listed numbers corresponding to F039 constituents, are currently managed as part of Hanford cleanup operations. Wastes bearing these waste numbers are intended for future disposal in the mixed waste landfill [Low-Level Burial Grounds (LLBG)]. These wastes, therefore, eventually will contribute to generation of F039 multisource leachate from this unit, and are specifically considered in the analysis of F039 constituents in DOE-RL's delisting proposal (refer to Appendix B of the November 2001 delisting petition). The DOE-RL believes that wastewaters bearing these waste could be generated from activities such as spill cleanup or equipment decontamination, and such wastewaters could be managed best at the 200 Area ETF. The DOE-RL is not proposing to manage the discarded commercial chemical products in the 200 Area ETF, but only wastewaters from spill cleanup or equipment decontamination. EPA believes that this is a reasonable approach, and is proposing to include these U- and P-listed numbers in today's proposed exclusion.

To ensure that the commercial chemical compounds themselves are not inappropriately managed at the 200 Area ETF, EPA is proposing as a condition of the proposed exclusion for these wastes

that the 200 Area ETF may manage only wastewaters bearing less than 1.0 weight percent of any hazardous constituent. As discussed in Section V, this same approach is being proposed for concentrated wastes from treatment of such U- and P-listed wastewaters, which also would bear the same U- and P-listed numbers by virtue of the 'derived from' rule discussed above in Section I.A. Because the hazardous constituents from these U- and P-listed wastes are already included in the analysis of 200 Area ETF performance for treatment of F039, EPA is not proposing any separate analysis specific to U- and P-listed numbers. EPA's proposal to include these U- and P-listed waste numbers in today's proposed action is intended to include wastewaters that might be generated from management of wastes currently stored in CWC, as well as such wastes managed elsewhere on-site or which may be generated in the future.

Beginning in 2007, DOE-RL expects to begin processing liquid effluents (wastewaters) from the Waste Treatment Plant (WTP), which currently is being designed and constructed to treat high-level mixed waste stored in 177 underground storage tanks. At this time, a complete, detailed characterization of WTP liquid effluents is not available. Should this waste stream fit within the conditions of today's proposal, then the WTP effluents could be managed under this delisting action, if finalized. Should WTP effluents require significant reconfiguration of the 200 Area ETF system to be treated successfully or be outside the waste volume limitations or treatability envelope, or otherwise fail to meet the requirements of today's propsoal, the DOE-RL could not manage either the treated effluent or concentrated wastes resulting from processing of WTP effluents as excluded wastes. In this instance, the DOE-RL would need to seek a further modification of the delisting rulemaking.

Given the lack of characterization data for future WTP effluents, EPA specifically is not considering this waste stream in its analysis of the proposed delisting action, other than to acknowledge that the DOE-RL might manage WTP effluents in the 200 Area ETF, provided the applicable delisting criteria and verification sampling requirements are met. EPA anticipates that it might be necessary to further modify the treated effluent delisting rule once WTP effluents are fully characterized.

B. What information and analyses did DOE RL submit to support these petitions?

The DOE-RL has provided a general description of the various waste streams that the 200 Area ETF expects to manage in addition to 242-A Evaporator PC and other waste streams currently being treated. This information is found in Section 3.0 of the November 2001 delisting petition. Some of these waste streams have not yet been generated. As a result, these waste streams cannot be fully characterized at this time, nor can surrogate wastewaters be developed as was done as part of pilot testing associated with the original delisting action. The DOE-RL's request to modify the original delisting is based on extending the original process model, which has been validated through operating history, to these anticipated future waste streams. EPA is proposing that liquid effluent from these new waste streams be conditionally managed as excluded waste provided that the DOE-RL demonstrates prior to 200 Area ETF processing that delisting criteria can be met through application of the 200 Area ETF process model. All waste streams, including new waste streams that do not have an operating history of being managed at the 200 Area ETF, will be subject to a verification sampling requirement similar to that in the original delisting action for 242-A Evaporator PC. As with the original delisting action, all waste streams

will be subject to routine, periodic verification sampling. (See Section III.N for a discussion of the applicability of LDR treatment requirements.)

The DOE-RL has submitted substantial data comparing actual operating performance of the 200 Area ETF to predicted treatment efficiency developed through pilot plant testing. These data consistently validate the pilot plant model developed in support of the original delisting, and indicate that for 242-A Evaporator PC processed to date, treatment efficiency is well in excess of that predicted by the process model. These data are presented in Table A-1 of the November 2001 delisting petition. The EPA believes that these data confirm that the 200 Area ETF is a robust treatment system well equipped to provide treatment necessary to meet delisting criteria for the wide range of new waste streams considered in this revised delisting action.

Detailed characterization data are not available for many non-process condensate waste streams that the DOE-RL proposes for consideration under this delisting action. Therefore, the DOE-RL has proposed a detailed waste acceptance process that allows this analysis to be conducted in conjunction with the 200 Area ETF waste acceptance process required by the Hanford Facility RCRA Permit WA7890008967 and the State Waste Discharge Permit (ST4500) for the SALDS. Particulars of the waste acceptance process with respect to this proposed delisting action can be found in Section 2.2 of the November 2001 delisting petition. In addition, Ecology provided technical assistance to the EPA on this matter by reviewing DOE-RL's 200 Area ETF waste acceptance process, including permit-required quality assurance plans (QAPs). EPA concurs with Ecology's findings that the waste profiling and acceptance process at the 200 Area ETF is sufficient to support delisting of the resulting treated effluents.

Briefly, this waste acceptance process is intended to accomplish the following:

- Establish operating conditions and operating configuration of the 200 Area ETF;
- Ensure contaminant concentrations do not interfere with or foul 200 Area ETF treatment processes (e.g., interfere with ultraviolet oxidation (UV/OX) destruction, foul reverse osmosis (RO) membranes, etc.);
- Ensure compatibility with 200 Area ETF materials of construction and other wastewaters;
- Ensure treated effluents meet delisting criteria and SALDS waste discharge permit requirements;
- Estimate concentrations of constituents in the secondary treatment train and in concentrated waste (a discussion of EPA's proposed delisting of concentrated wastes follows);
- Ensure compliance with Hanford Facility RCRA Permit waste acceptance requirements.

Based on waste profile information provided by wastewater generators, the DOE-RL would compare constituent concentrations to ensure that the influent falls within the 200 Area ETF treatability envelope. The ETF treatability envelope is defined as the maximum untreated waste

concentrations that the 200 Area ETF is capable of managing to meet treated effluent delisting criteria. The treatability envelope concept is essentially the same approach used by the EPA in evaluating treatability data provided by the DOE-RL in support of the original delisting petition, with modifications to account for operating history. In some instances, wastewaters are accepted directly into the 200 Area ETF for treatment, while other wastewaters are accepted into the Liquid Effluent Retention Facility (LERF) basins.[6] Waste acceptance evaluations for wastewaters managed in LERF basins account for compatibility with basin materials and commingled wastewaters, and treatability envelope evaluation reflect the commingled wastewater stream. Wastewaters are required to undergo periodic re-valuation under the site-wide permit waste analysis plan.

The DOE-RL's petition for modifying the existing treated effluent delisting is based on establishing a waste processing strategy for each waste stream. Each time a new wastewater is managed in the 200 Area ETF, a document must be prepared containing the waste processing strategy to reflect specific waste constituents and to ensure that the treated effluent meets delisting criteria. The waste processing strategy consists of the processing configuration of the various treatment technologies available at the 200 Area ETF and the operating conditions of each. Examples of operating conditions include UV/OX residence time, RO reject rate, etc. Wastewaters that fit within the treatability envelope for a particular processing strategy can be processed directly, subject only to the permit-required periodic re-evaluation of each waste stream with respect to waste acceptance criteria, and periodic verification of the treated effluent with respect to delisting requirements. Wastewaters for which a new processing strategy is developed where no operating history has been accumulated must undergo initial verification sampling similar to that required by the original delisting action. EPA believes that this scheme of establishing waste acceptance and processing strategy on a verified process model, coupled with initial and periodic on-going verification, provides certainty that delisting criteria will be met, reflecting data that validate the original process model, and the redundancy of verification testing, and is consistent with the delisting framework established in the original delisting action. In addition, it provides flexibility needed for the 200 Area ETF to fulfill its key role in Hanford Site cleanup activities.

C. How did EPA evaluate the risk of delisting this waste?

For EPA to delist a particular waste, the petitioner must demonstrate that the waste does not meet any of the criteria under which the waste was listed. and that the waste does not exhibit any of the hazardous waste characteristics defined in 40 CFR 261.21 through 261.24. In addition, based on a complete application, EPA must determine where it has a reasonable basis to believe that factors (including additional constituents) other than those for which the waste was listed that could cause the waste to be a hazardous waste, that such factors do not warrant retaining the waste as a hazardous waste. For petitioned waste that contains detectable chemical constituents, EPA generally makes this determination by gathering information to identify plausible routes of

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[6]Information concerning management of influent wastewaters is provided for background and informational purposes only. Whether influent wastewaters are received directly by the 200 Area ETF directly or via management in the LERF basins is generally an operational decision distinct from the question of whether the wastewaters are acceptable candidates for management under today's proposed delisting.

human or environmental exposure (i.e., groundwater, surface water, air) and using fate and transport models to predict the release of hazardous constituents from the petitioned waste once the waste is disposed. The transport model predicts potential exposures and impacts of the petitioned waste on human health and the environment.

As discussed in the original delisting proposal (60 FR 6054, February 1, 1995), EPA used a modified version of the Environmental Protection Agency Composite Membrane Liner (EPACML) model based on disposal of waste in a surface impoundment to establish delisting levels for treated 200 Area ETF effluent. The original delisting proposal included a discussion of plausible exposure routes and an analysis of how these potential exposure routes influenced EPA's selection of delisting criteria, as well as a detailed discussion of how delisting levels were calculated from model outputs and toxicological data.

In analyzing the DOE-RL's current delisting petition, EPA does not believe that there is a substantial basis for choosing a different approach to evaluating the risks of delisting this waste or for establishing revised delisting criteria. In reaching this conclusion, we considered several factors:

- No changes in waste disposal practices. The DOE-RL currently manages treated 200 Area ETF effluents in the same manner as considered by EPA in the original delisting analysis, and DOE-RL's revised delisting petition does not propose any changes in these waste disposal practices. Therefore, we do not find any basis for any different analysis of potential exposure pathways or modeling compared to the original delisting analysis.

- 200 Area ETF treatment technology. Current 200 Area ETF processing technologies and configurations remain unchanged from the proposed design considered in EPA's original upfront delisting analysis. Further, the 200 Area ETF operating history confirms the treatment efficiencies and performance predicted by pilot plant testing and considered by EPA in the original delisting analysis. Therefore, we do not find any basis for alternate evaluation methodologies based on the treatment capabilities of the 200 Area ETF.

- Wastes managed by the 200 Area ETF. Although the original delisting analysis considered only PC from the 242-A Evaporator, this waste stream is quite complex, and is characterized by a wide range of chemical constituents and classes of compounds from diverse wastes in the Hanford Facility double shell tank system. Specifically with respect to organics and the treatment efficacy of ultraviolet oxidation (UV/OX), the original delisting analysis was based on treatment efficiency for groups or classes of organic compounds. Although today's proposal considers additional chemical compounds that might be present in F039 multisource leachate from wastes other than F001 through F005, EPA believes that these additional constituents can be analyzed easily using the original methodology. Further, EPA does not believe that any of the additional constituents considered in this delisting proposal pose treatability or risk questions that suggest the original chemical group approach to analyzing delisting risks and establishing delisting levels needs to be re evaluated. A more specific discussion of how treatability groups and delisting levels are established, considering the additional waste streams and

waste numbers to be managed by the 200 Area ETF under this proposed delisting, can be found in Section 4.1.1 of the November 2001 delisting petition.

EPA also has examined the performance record of discharges of treated effluents from the 200 Area ETF under State Waste Discharge Permit No. ST4500. This permit, issued under the authority of Chapter 90.48 of the Revised Code of Washington, as amended, requires monitoring of treated effluent and of groundwater affected by the SALDS. There are three elements to the ST4500 Permit monitoring requirements. These include maximum effluent limitations, 'early warning' effluent limitations that provide an early warning that groundwater limitations are being approached in the effluent and groundwater limits. The meaning of these terms is as follows:

- ST4500 Permit effluent monthly average - the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

- Groundwater limit - maximum constituent concentration allowed in groundwater at monitoring well specified in the ST4500 Permit.

- Groundwater early warning limit - constituent concentration in groundwater that trigger early warning reporting requirements. Exceeding an early warning value does not constitute a violation of ST4500 Permit requirements.

- Proposed delisting treatability group - class of similar chemical constituents as defined in Table 4-1 of the November 29, 2001 delisting petition.

- Proposed Delisting level - constituent concentration limit for treated effluent in today's proposal.

These limits, including a comparison to proposed delisting levels (Section D), are shown in the following table. All values are mg/L.

Constituent	ST 4500 Permit effluent monthly average	Groundwater limit	Effluent groundwater early warning	Proposed delisting treatability group	Proposed delisting level	Comments
Acetone	N/A	0.16	N/A	19	2.4	
Acetophenone	0.01	N/A	N/A	19	N/A	
Benzene	N/A	0.005	0.005	3	0.06	
Carbon Tetrachloride	0.005	N/A	N/A	13	0.018	
Chloroform	N/A	0.062	0.005	13	N/A	
n-Nitrosodimethylamine	0.02	N/A	N/A	10e	0.02	Limit based on PQL
Tetrachloroethylene	0.005	N/A	N/A	14	N/A	
Tetrahydrofuran	N/A	0.1	0.1	18a	0.56	
Total Organic Carbon (TOC)	1.1	N/A	N/A	N/A	N/A	

Arsenic	0.015	N/A	N/A	22	0.015	
Beryllium	0.04	N/A	N/A	21	0.045	
Cadmium	N/A	0.01	0.0075	22	0.011	
Chromium	0.02	N/A	N/A	22	0.068	
Copper	N/A	0.07	0.07	N/A	N/A	
Lead	N/A	0.05	0.038	22	0.09	
Mercury	N/A	0.002	0.002	22	0.0068	
Ammonia	0.83	N/A	N/A	24	6	
Chloride	N/A	N/A	N/A	N/A	N/A	
Nitrate	N/A	N/A	N/A	N/A	N/A	
Nitrite	N/A	N/A	N/A	N/A	N/A	
Sulfate	N/A	250	N/A	N/A	N/A	
Total Dissolved Solids	N/A	500	380	N/A	N/A	

PQL = practical quantitation limit.
N/A = not applicable.

To date, the DOE-RL has not reported any exceedences of any of the three monitoring criterion established by the ST4500 Permit. According to the Ecology fact sheet issued in conjunction with the latest reissue of the ST4500 Permit:
"During the history of the previous permit, the Permittee has remained in compliance based on Discharge Monitoring Reports (DMRs) and other reports submitted to Ecology and inspections conducted by Ecology." The only exceptions have been a few early high groundwater levels of sulfate. The sulfate levels were not due to the discharge of sulfate, but rather by the clean effluent dissolving sulfate that exists in the vadose zone. The sulfate levels peaked for about a year, always below groundwater standards, and have since returned to background levels.

Given that all of these ST4500 Permit wastewater discharge limits are at or below corresponding delisting levels, EPA concludes that the 200 Area ETF performs at least as well as the proposed delisting levels. This conclusion supports EPA's belief that 200 Area ETF processing model is well validated, and can be appropriately used to predict performance of 200 Area ETF for treatment of new waste streams for which actually operating data is not yet available. Further, these data show 200 Area ETF discharges to SALDS are not having a significant impact on groundwater. EPA therefore concludes that further analysis of groundwater monitoring data is not necessary in the context of the proposed delisting revisions.

D.
EPA is proposing to exclude certain treated effluents by establishing a set of verification constituents and concentrations that must be met as a condition of the exclusion. These concentrations are referred to as delisting levels. The process of selecting delisting levels and proposed verification constituents is similar to that used in the existing 200 Area ETF exclusion where constituents that are representative of a treatability group were selected as verification parameters.

Treatability groups proposed in today's proposal can be found in Table 4-1 of the November 21, 2001 delisting petition. Treatability groups have been established by grouping chemicals

identified as 200 Area Effluent Treatment Facility Consolidated Constituents in Table B-1 of the November 29, 2001 delisting petition according to similar chemical structure and function. For example, all organics with phthalate structure are grouped into treatability group 8. Inorganics (metals in particular) are each assigned to their own treatability group. One difference in the selection process for organic treatability groups is that one constituent is selected and proposed to represent a treatability group. For inorganic treatability groups, each constituent is in a separate treatability group.

Because the initial delisting was an upfront delisting,[7] multiple constituents were selected for a few treatability groups. The initial delisting focused exclusively on listed wastewaters with a designation of F001 to F005, or F039 derived from F001 to F005, and the verification parameters included multiple constituents in several treatability groups. Because this delisting modification expands the constituents being delisted under the F039 waste number, the proposed verification constituents need to represent all the treatability groups. EPA's analysis of data presented in the DOE-RL's petition indicate that the data verify the process model used in the original delisting action. Further, EPA's concludes treatment performance necessary to meet delisting exclusion limits will be successfully demonstrated by the individual constituents proposed to represent each treatability group. Since these representative constituents have been selected after consideration of both toxicity and difficulty to treat, EPA concludes that requiring multiple constituents to represent each treatability group would not provide greater assurance that exclusion limits are met for all constituents in the treatability group.

The constituents and the delisting levels for monitoring are determined in a three-phase approach. First, the health-based levels (HBLs)[8] are calculated based on toxicological data for each constituent of concern identified in Table B-1 of the November 2001 delisting petition. The HBLs are calculated using current toxicological data from IRIS, HEAST, and NCEA.[9] The target risk factor of 1.0x10 5 excess cancer risk is used with the oral slope factor to calculate a HBL for carcinogens. The target hazard quotient factor of 0.10 is used with the reference dose for oral exposure to calculate a HBL for non-carcinogens. When an oral slope factor and a reference dose for oral exposure are both available, the minimum (more conservative) resulting

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[7] An upfront delisting is an exclusion granted for a waste stream prior to full-scale commercial generation or treatment of the waste stream. In contrast, a traditional exclusion applies to an existing waste stream that can be fully characterized on a commercial scale. Today's proposed exclusion is principally a traditional exclusion (in the sense that the 200 Area ETF has a number of years of operating history and extensive characterization data for treated effluents), with some elements of an up-front delisting (in the sense that some influents to the 200 Area ETF whose treated effluents might be managed under this proposed exclusion have not been generated, characterized or managed by the 200 Area ETF as of today's proposal has a number of years of operating history and extensive characterization data for treated effluents), with some elements of an up-front delisting (in the sense that some influents to the 200 Area ETF whose treated effluents might be managed under this proposed exclusion have not been generated, characterized or managed by the 200 Area ETF as of today's proposal.

[8] Health-based levels are considered the cancer slope factor for carcinogens, and the reference dose for constituents with non-cancer health effects.

[9] The Integrated Risk Information System (IRIS) can be found at http://www.epa.gov/iris. The Health Effects Assessment Summary Tables (HEAST) can be found at "Health Effects Assessment Summary Tables FY 1997 Update," 9200.6-303(97-1), EPA 540/R-97-036, PB97-921199, July 1997.

HBL is used. The groundwater ingestion pathway was the only pathway considered to be consistent with the initial delisting exclusion, found in 40 CFR 261, Appendix IX.

Second, a constituent is selected from a treatability group to represent the entire group. This methodology uses HBLs (the lower the HBL the higher the constituent toxicity), the electrical energy/order (EE/O), which is a measure of the UV/OX treatment efficiency for a constituent (the higher the EE/O the more difficult it is to destroy a constituent), and the practical quantitation limit (PQL). Constituents are ranked by the HBL and by the EE/O. HBLs within a factor of 10 are considered identical for this selection process because HBLs of constituents within most treatability groups range over a number of orders of magnitude. Each treatability group is evaluated individually. The constituents having the lowest HBL and the highest EE/O are the first candidates considered for selection. To ensure that acceptable analytical data can be obtained, the PQL is considered. If the PQL is higher than the delisting level (HBL times the dilution attenuation factor [DAF]),[10] then another constituent is evaluated.

Finally, the delisting levels are proposed based on the HBL times the DAF of 6. The methodology used by DOE-RL to calculated this DAF applicable to the updated delisting appears in Section 4.0 of the November 2001 delisting petition. EPA has previously determined that the methodology used by DOE-RL in establishing the DAF of 6 is protective in a previous delisting (see 56 FR 32993, July 18, 1991). In a few cases, the delisting level is based on either the PQL, maximum contamination limit (MCL), or a concentration level derived from requirements of the Toxic Substance Control Act (TSCA) applicable to polychlorinated biphenyls (PCB) remediation waste, which EPA has determined to be protective of unrestricted exposure. See Section III.N for a discussion of the relationship between delisting levels in today's proposal and LDR treatment requirements.

There are a number of constituents of concern in treated effluent where toxicological data are inconclusive or lacking. Because all the constituents are placed in treatability groups, constituents having toxicological data available for remaining treatability group constituents - these remaining constituents are considered to represent the treatability group. Stated another way, constituents representing each treatability group are selected based on a combination of available health-based data, difficulty to treat, and availability of acceptable analytical information. Therefore, EPA believes that the methodology established in the original 200 Area ETF delisting and adopted as the basis for today's proposal provides certainty that when delisting criteria for representative constituents are met, all constituents in the same treatability group satisfy delisting requirements.

This argument also supports EPA's proposal to have a single chemical constituent represent each treatability group. As noted above, each constituents representing a treatability group is selected

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[10] A dilution/attenuation factor is a measure of fate and transport effects on constituents as they migrate from a source area, and a receptor. In this instance, the source area is the SALDS unit, modeled as an unlined surface impoundment and the receptor is a hypothetical individual ingesting groundwater affected by the waste source). Details of how the EPACML model was used to calculate DAF values for the 200 Area ETF may be found in the original delisting proposal, 60 FR 6054, February 1, 1995.

on the basis of a combination of being difficult to treat and most toxic. Provided the ETF waste processing strategy successfully demonstrates that the selected represented constituent meets delisting limits (as required as a condition of today's proposal), any other constituent in the same treatability group would either be less toxic, or be more completely destroyed or removed from the treated effluent than the representative constituent. In either instance, the selected representative constituent will always be the limiting factor within each treatability group with respect to meeting the requirements to exclude a particular waste.

EPA has not specifically evaluated environmental receptors in the original delisting or today's proposal because the proposed management scenario for excluded wastes is specifically intended to preclude exposure for an extended period of time during natural decay of radioactive tritium (which technically impracticable to treat or remove from the 200 Area ETF effluent). To ensure treated effluent is not managed in a manner that might create environmental exposures, the EPA is proposing to limit management of treated effluent to the SALDs disposal unit.

The following are exceptions to this methodology.

- Group 2: Diethylstilbestrol, also called estrogen, was not selected because of analytical measurement difficulties and this constituent is highly unlikely to be in wastewater treated at the 200 Area ETF.

- Group 9a: 1-Butanol was chosen over propargyl alcohol because 1-butanol is expected to be more prevalent in would be identified by the verification sampling program.

- Group 10a: All constituents containing hydrazine were eliminated from selection because of their reactivity un measures of effective treatment for this treatability group.

- Group 10e: N-Nitrosodimethylamine was chosen. Because of analytical measurement difficulties, the delisting level is the PQL.

- Group 12: The delisting level for PCBs is based on the TSCA limit of 0.0005 mg/L (0.5 ppb). This level is where treated remediation waste is authorized for unrestricted use.[11]

- Group 17, 17a: The aldehyde group, in general, is reactive in water, which makes these constituents unlikely tc treatability Group 13, the group that is most difficult to destroy.

- Group 19: Acetone was chosen over acetophenone because acetone is expected to be a more prevalent contaminant in wastewaters treated at the 200 Area ETF.

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[11] In establishing a delisting limit based on the TSCA unrestricted use limit of 0.5 parts per billion for liquid remediation wastes, EPA is not necessarily representing that wastewaters managed by the 200 Area ETF are necessarily TSCA remediation wastes. Rather, EPA is simply "borrowing" a technical standard developed for PCBs and applying it in a RCRA exclusion rulemaking.

•Group 22, 21: The delisting level for arsenic is based on the PQL rather than the HBL. The delisting level for lead is based on the MCL for drinking water rather than a level based on toxicity.

•Group 25: This group includes group 25a and 25b. Tributyl phosphate was chosen from this group as tributyl phosphate is expected to be more prevalent in wastewaters treated at the 200 Area ETF.

Based on this methodology, Table 1 provides a list of proposed delisting constituents and delisting levels.

Table 1. Proposed Delisting Constituents and Delisting Levels for Treated Effluent.

Treatability group	Proposed delisting constituents	CAS #	HBL (mg/L)	EE/O	Justification	Proposed delisting level (mg/L)
1	Cresol [Cresylic acid]*	1319-77-3	$2.0x10^{-11}$	10	Representing group, has relatively low HBL and highest EE/O of group, target compound in SW-846 method(4), PQL less than delisting level.	1.2
2	2,4,6-trichlorophenol	88-06-2	$6.0x10^{-2}$	10	Representing group, has a low HBL and is a hard to destroy compound, target compound in SW-846 method, PQL less than delisting level	$3.6x10^{-1}$
3, 15, 15a	Benzene*	71-43-2	$1.0x10^{-2}$	3	Representing group, the compound with the lowest HBL, target compound in SW-846 method, PQL less than delisting level.	$6.0x10^{-2}$
4	Chrysene	218-01-9	$9.0x10^{-2}$	10	Representing group, has a relatively low HBL and is one of the hard to destroy compounds, target compound in SW-846 method, PQL less than delisting level. Chrysene was chosen because the other constituents with lower HBLs have analytical measurement difficulties.	$5.6x10^{-1}$
5, 5a, 16	Hexachlorobenzene	118-74-1	$4.0x10^{-4}$	10	Representing group, has a relatively low HBL and is one of the hard to destroy compounds, target compound in SW-846 method, PQL less than delisting level. Hexachlorobenzene was chosen because Heptachlorodibenzofuran and Heptachlorodibenzo-p-dioxins have analytical measurement difficulties.	$2.0x10^{-3}$
6b, 14	Hexachlorocyclopentadiene	77-47-4	$3.0x10^{-2}$	10	Representing group, has a low HBL and is a hard to destroy compound, target compound in SW-846 method, PQL less than delisting level. Hexachlorocyclopentadiene was chosen over 1,4-Dichloro-2-butene and Hexachlorobutadiene because of analytical measurement difficulties, and over 1,1-Dichloroethylene and Vinyl chloride because of a higher EE/O.	$1.8x10^{-1}$

Treatability group	Proposed delisting constituents	CAS #	HBL (mg/L)	EE/O	Justification	Proposed delisting level (mg/L)
7a	Dichloroisopropyl ether [Bis(2-Chloroisopropyl) ether]	108-60-1	$1.0x10^{-3}$	15	Representing group 7a and 7b, has a relatively low HBL and the EE/O is highest of group, target compound in SW-846 method, PQL less than delisting level. Dichloroisopropyl ether was chosen over Bis(2-Chloroethyl) ether and Dichloromethyl ether because of a higher EE/O.	$6.0x10^{-2}$
8	Di-n-octylphthalate*	117-84-0	$8.0x10^{-2}$	15	Representing group, has a relatively low HBL and the EE/O is highest of group, target compound in SW-846 method, PQL less than delisting level	$4.8x10^{-1}$
9a	1-Butanol*	71-36-3	$4x10^{-1}$	10	Representing group, the compound with the lowest HBL, target compound in SW-846 method, PQL less than delisting level.	2.4
9	Isophorone	78-59-1	$7.0x10^{-1}$	30	Representing group, has a relatively low HBL and the EE/O is highest of group, target compound in SW-846 method, PQL less than delisting level. Isophorone was chosen because the other constituents with lower HBLs have analytical measurement difficulties and isophorone had the highest EE/O.	4.2
10a	Diphenylamine	122-39-4	$9.0x10^{-2}$	15	Representing group, has a relatively low HBL and the EE/O is close to highest of group, target compound in SW-846 method, PQL less than delisting level. Diphenylamine was chosen because other constituents with lower HBLs have analytical measurement difficulties.	$5.6x10^{-1}$
10b	p-Chloroaniline	106-47-8	$2.0x10^{-2}$	10	Representing group, has a relatively low HBL and the EE/O is highest of group, target compound in SW-846 method, PQL less than delisting level. p-Chloroaniline was chosen over 4,4'-Methylenebis(2-chloroaniline) and o-Nitroaniline because of analytical measurement difficulties.	$1.2x10^{-1}$
10c	Acetonitrile	75-05-8	Recinded, previous HBL is 0.2 mg/L	10	Representing group, has a relatively low HBL and the EE/O is close to highest of group, target compound in SW-846 method, PQL less than delisting level, the 1994 established HBL is used. Acetonitrile was chosen because it has, by far, the highest EE/O.	1.2
10d	Carbazole	86-74-8	$3.0x10^{-2}$	30	Representing group, has a relatively low HBL and it is one of the more difficult compounds to destroy, target compound in SW-846 method PQL less than delisting level. Carbazole was chosen because other constituents with lower HBLs have analytical measurement difficulties.	$1.8x10^{-1}$

Treatability group	Proposed delisting constituents	CAS #	HBL (mg/L)	EE/O	Justification	Proposed delisting level (mg/L)
10e	N-Nitrosodimethylamine	62-75-9	$1.0x10^{-5}$	10	Representing group, target compound in SW-846 method, because of analytical measurement difficulties, the PQL is used as the delisting level.	$2.0x10^{-2}$
10f	Pyridine	110-86-1	$4.0x10^{-3}$	4	Representing group, the compound with a low HBL, target compound in SW-846 method, PQL less than delisting level. Pyridine was chosen because the other constituent with a lower HBL has analytical measurement difficulties.	$2.4x10^{-2}$
11	Lindane [gamma-BHC]	58-89-9	$5.0x10^{-4}$	40	Representing group, has a low HBL and is one of the more difficult compounds to destroy, target compound in SW-846 method, PQL less than delisting level. Lindane was chosen because of those with lower HBLs lindane has the highest EE/O.	$3.0x10^{-3}$
12	Aroclor 1016, 1221, 1232, 1242, 1248, 1254, 1260	PCBs	$3.0x10^{-4}$	15	Representing group, target compound in SW-846 method, delisting level based on TSCA value, PQL less than delisting level	$5.0x10^{-4}$
13, 6a	Carbon tetrachloride*	56-23-5	$3.0x10^{-3}$	200	Representing group, has relatively low HBL and is the compound with the highest EE/O, target compound in SW-846 method, PQL less than delisting level. Carbon tetrachloride was chosen because the other constituent with a lower HBL has analytical measurement difficulties and carbon tetrachloride has by far the highest EE/O.	$1.8x10^{-2}$
18a	Tetrahydrofuran	109-99-9	$9.0x10^{-2}$	4	Representing group 18 and 18a, a compound with relatively low HBL, target compound in SW-846 method, PQL less than delisting level. Tetrahydrofuran was chosen because the other constituent with a lower HBL has analytical measurement difficulties.	$5.6x10^{-1}$
19	Acetone*	67-64-1	$4.0x10^{-1}$	10	Representing group, has a relatively low HBL and is one of the harder to destroy compounds, target compound in SW-846 method, PQL less than delisting level.	2.4
20	Carbon disulfide	75-15-0	$4.0x10^{-1}$	5	Representing group, the compound with the lowest HBL, target compound in SW-846 method, PQL less than delisting level.	2.3
21, 22	Barium*	7440-39-3	$3.0x10^{-1}$		HBL * DAF is delisting level, PQL is less than delisting level	1.6
21, 22	Beryllium*	7440-41-7	$8.0x10^{-3}$		HBL * DAF is delisting level, PQL is less than delisting level	$4.5x10^{-2}$
21, 22	Nickel*	7440-02-0	$8.0e10^{-2}$		HBL * DAF is delisting level, PQL is less than delisting level	$4.5x10^{-1}$
21, 22	Silver*	7440-22-4	$2.0x10^{-2}$		HBL * DAF is delisting level, PQL is less than delisting level	$1.1x10^{-1}$
21, 22	Vanadium*	7440-62-2	$3.0x10^{-2}$		HBL * DAF is delisting level, PQL is less than delisting level	$1.6x10^{-1}$

Treatability group	Proposed delisting constituents	CAS #	HBL (mg/L)	EE/O	Justification	Proposed delisting level (mg/L)
21, 22	Zinc*	7440-66-6	1.0		HBL * DAF is delisting level, PQL is less than delisting level	6.8
22, 21	Arsenic*	7440-38-2	$5.0x10^{-4}$		HBL below PQL, PQL of 0.015 mg/L used as delisting level	$1.5x10^{-2}$
22, 21	Cadmium*	7440-43-9	$2.0x10^{-3}$		HBL * DAF is delisting level, PQL is less than delisting level	$1.1x10^{-2}$
22, 21	Chromium*	7440-47-3	$1.0x10^{-2}$		HBL * DAF is delisting level, PQL is less than delisting level	$6.8x10^{-2}$
22, 21	Lead*	7439-92-1	$1.5x10^{-2}$		No HBL, used MCL of 0.015 mg/L and DAF = 6, (MCL * DAF)	$9.0x10^{-2}$
22, 21	Mercury*	7439-97-6	$1.0x10^{-3}$		HBL * DAF is delisting level, PQL is less than delisting level	$6.8x10^{-3}$(2)
22, 21	Selenium*	7782-49-2	$2.0x10^{-2}$		HBL * DAF is delisting level, PQL is less than delisting level	$1.1x10^{-1}$
23	Fluoride*	16984-48-8	$2.0x10^{-1}$		HBL * DAF is delisting level, PQL is less than delisting level	1.2
24	Ammonia*	7664-41-7	1.0(3)		HBL * DAF is delisting level, PQL is less than delisting level	6.0
24	Cyanide*	57-12-5	$8.0x10^{-2}$		HBL * DAF is delisting level, PQL is less than delisting level	$4.8x10^{-1}$
25a	Tributyl phosphate*	126-73-8	$2.0x10^{-2}$ (4)	5	Representing group 25a and 25b, the compound with a low HBL, target compound in EPA method, PQL less than delisting level. No updated HBL. Previous delisting level is used, adjusted for a DAF of 6 instead of 10.	$1.2x10^{-1}$

CAS = Chemical Abstract Service.
DAF= dilution attenuation factor.
HBL= health-based levels.
MCL= maximum contamination limit.
PQL= practical quantitation limit
TSCA = Toxic Substances Control Act of 1976
(1) The HBL for cresol is assumed to be that for o-cresol and m-cresol.
(2) The HBL for ammonia is assumed to be the same as used in the initial Delisting Petition.
(3) The HBL for tributyl phosphate is assumed to be the same as used in the initial Delisting Petition.
(4) The phrase "Target compound in SW-846" means that the associated constituent can be analyzed for and reported using promulgated SW-846 analytical methods.
* Current delisting parameters.

E. What other factors did EPA consider in its evaluation?

As noted previously, EPA believes that the approach used in the original 200 Area ETF treated effluent delisting action is sound and environmentally protective. Therefore, EPA has not considered other factors in this proposed delisting modification.

F. What did EPA conclude about DOE-RL's analysis?

After reviewing the DOE-RL petition, the EPA concludes that (1) no RCRA hazardous constituents are likely to be present in treated effluents above health-based delisting levels; and

(2) the petitioned waste does not exhibit any of the characteristics of ignitability, corrosivity, reactivity, or toxicity (refer to 40 CFR 261.21, 261.22, 261.23, and 261.24, respectively).[12] In addition, EPA considered other factors or criteria enumerated in Section I.B that could cause the wastes to be hazardous under RCRA. Although today's proposal expands the list of constituents for which the wastes are excluded to include certain P-listed waste numbers which are defined by 40 CFR 261.33 as acutely hazardous, the treated effluents are no longer acutely hazardous and maybe excluded from the definition of hazardous waste. The remaining factors discussed in Section I.B are considered as part of the process used to establish exclusion limits or the verification sampling program applicable to the wastes proposed for exclusion.

G. What must DOE RL do to demonstrate compliance with the proposed exclusion?

DOE-RL's obligation to demonstrate compliance with this proposed exclusion has two key components. The first is to demonstrate that each influent wastewater is within the processing capabilities (defined in this context as the ability to treat to delisting levels) of the 200 Area ETF prior to treatment. This demonstration is made through application of the verified treatment efficiency process model for the 200 Area ETF unit operations to waste characterization data required by the waste characterization and acceptance procedures in Hanford's site-wide RCRA permit, WA7890008967. The second component is a treated effluent sampling program intended to verify that the predicted treatment levels in fact are achieved. The verification sampling program in turn has two phases - an initial qualification sampling requirement applicable to all influent waste streams that do not have an operating history of treatment in 200 Area ETF, and an on-going verification 'spot check' sampling requirement. The first qualification phase is intended to demonstrate that the predicted treatment efficiencies can be achieved for new waste streams, while the 'spot check' requirement is intended to identify any long-term changes in treatment efficiency or influent waste stream variability that would impact the ability of the 200 Area ETF to meet delisting requirements. At any time that an initial or verification sampling event indicates failure to meet delisting criteria, the DOE-RL is required to re evaluate the waste characterization data (to identify any constituents, constituent levels, or other factors that might affect treatability of the waste), the treatment strategy and operational baseline, and to make any changes necessary to ensure subsequent batches of treated effluent do not fail delisting criteria. As with new treatment strategies, the initial treated effluent batch after any waste treatment strategy changes also is subject to verification sampling to ensure the treatment strategy changes are effective. In all cases where verification sampling is required, the corresponding batch of treated effluent cannot be discharged to the SALDs unit until compliance with delisting exclusion limits can be documented. Both of these overall compliance components and the two

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[12] Delisting requirements of 40 CFR 260.22 state that an excluded waste cannot exhibit any of the characteristics of hazardous waste (reactivity, ignitability, corrosivity or toxicity. The delisting levels in today's proposal are below the toxicity characteristics levels, and there is no record of untreated or treated aqueous wastewaters associated with the 200 Area ETF having sufficient concentrations of any constituent to consider that the reactivity or ignitiability characteristic might be of concern with respect to treated effluents. Similarly, the nature of the treatment processes at the 200 Area ETF, which include multiple pH adjustment steps, insure that treated effluents do not exhibit the characteristic of corrosivity. EPA believes that treated effluents satisfy these delisting requirements, but given these considerations, do not believe it necessary to establish specific enforceable limits to insure that treated effluents meet delisting criteria. EPA believes that doing so would impose a burden on DOE-RL not warranted on the basis of treated effluents possibly exhibiting a hazardous characteristic.

verification sampling program phases are essentially the same as in the original delisting action, with modifications to reflect actual operating experience and the additional influent wastes the 200 Area ETF expects to manage under this proposed exclusion.

EPA is also proposing additional conditions to ensure ongoing compliance with delisting exclusion limits. First, EPA is proposing a re-opener provision to allow EPA to re-evaluate the protectiveness of today's exclusion limits and management requirements should new information become available that might alter conclusions reached should today's proposal be finalized. EPA currently includes this re-opener provision as a standard component of delisting rulemakings. Second, EPA is proposing record keeping and reporting requirements. These conditions are intended to ensure that documentation of information necessary to review the compliance history of RL is appropriately recorded and maintained.

H. How must DOE RL manage the delisted waste for disposal?

As a condition of this proposed exclusion, DOE-RL would be required to manage the delisted waste for disposal at the SALDS. As noted elsewhere in this proposal, EPA anticipates and encourages the DOE-RL to evaluate alternate reuse options for treated effluent. Such changes in management practices will require modification of this proposed exclusion.

I. How must DOE RL operate the treatment unit?

The DOE-RL would be required to operate the 200 Area ETF according to the waste processing strategies developed pursuant to this proposed exclusion, if finalized, including the waste treatment strategy developed under Condition (1)(a). Although not a specific condition of this proposed delisting, the DOE-RL also must operate the 200 Area ETF in compliance with applicable RCRA regulations, the requirements of the Hanford Facility RCRA Permit WA7890008967, and the requirements of the State Waste Discharge Permit ST4500.

J. What must DOE RL do if the process changes?

EPA expects that 200 Area ETF treatment technologies will evolve and/or change over the operating life of the unit in support of Hanford Facility cleanup. EPA is proposing an exclusion condition that will allow the DOE-RL to modify the treatability envelope for the 200 Area ETF with written EPA approval to reflect such changes. Under today's proposal, such changes to the treatability envelope will not require modifications to the exclusion rule. EPA has included a re-opener clause that also provides a basis for modification of this proposed exclusion to reflect substantial changes to ETF or its performance. EPA notes that changes to the treatability envelope for ETF may might require modification to the State Waste Discharge Permit ST4500 as well.

K. What data must DOE RL submit?

EPA believes that the methodology in this proposed exclusion provides a sound and robust basis to accommodate the diverse waste streams expected to be managed by the 200 Area ETF under this proposed exclusion. Based on the 200 Area ETF operating history, EPA does not expect that the RL will encounter exceedances of delisting levels during verification sampling. Should exceedances occur, however, the retreatment and subsequent verification requirements of Conditions (2) and (3) in today's proposal provide assurances against environmental harm. Should such an exceedance occur, however, EPA believes that it might be indicative of

unanticipated changes in waste streams or 200 Area ETF operations that require regulatory evaluation beyond the self-implementing provisions of Conditions (2) and (3). Therefore, EPA is proposing a recordkeeping and data submission requirement to ensure that EPA and Ecology are aware of such situations, and have the opportunity to take any appropriate response actions.

The DOE-RL also must disclose new or different information related to the 200 Area ETF or disposal of the waste if the information is pertinent to the delisting (see Condition (4) of the proposed rule). This provision will allow EPA to re evaluate the exclusion if new or additional information becomes available to EPA. The EPA will evaluate the information on which we based the decision to see if the information still is correct, or if circumstances have changed so that the information no longer is correct or would cause EPA to deny the petition if presented. This provision expressly requires the DOE-RL to report differing site conditions or assumptions used in the petition within 10 days of discovery. If EPA discovers such information itself or from a third party, EPA can act on the information as appropriate. The language being proposed is similar to those provisions found in RCRA regulations governing no-migration petitions at 40 CFR 268.6.

EPA believes that we have the authority under RCRA and the Administrative Procedures Act, 5 USC 551 (1978) et seq. (APA), to re-open a delisting decision. We may re open a delisting decision when we receive new information that calls into question the assumptions underlying the delisting.

EPA believes a clear statement of its authority in delistings is merited in light of Agency experience, [refer to Reynolds Metals Company at 62 FR 37694 (July 14, 1997) and 62 FR 63458 (December 1, 1997), where the delisted waste leached at greater concentrations in the environment than the concentrations predicted when conducting the toxicity characteristic leaching procedure (TCLP), thus leading the Agency to repeal the delisting]. If an immediate threat to human health and the environment presents itself, EPA will continue to address these situations case by case. Where necessary, EPA will make a good cause finding to justify emergency rulemaking [refer to APA Section 553(b)].

L. What happens if DOE RL fails to meet the conditions of the exclusion?

If DOE-RL violates the terms and conditions established in the exclusion, the Agency may begin procedures to withdraw the exclusion. If the analytical testing of the waste indicates treated effluents do not meet the delisting criteria described previously, the DOE-RL must notify EPA according to Condition (6). Because the 200 Area ETF provides the capability to re-treat waste, EPA is not proposing to suspend this proposed exclusion if verification sampling results fail to demonstrate compliance with delisting levels. The proposed delisting conditions do, however, require the DOE-RL to review and/or modify the associated treatment strategy to ensure future treatment batches meet delisting criteria, and to perform additional verification testing to demonstrate that changes are effective. Note: Failure of treated effluent exclusion limits would not necessarily provide a basis to begin withdrawal proceedings, because the waste could be managed as hazardous without violating terms of today's proposed exclusion, or applicable waste management requirements.

M. What is EPA's final evaluation of this delisting petition?

We have reviewed DOE-RL's November 29, 2001 delisting petition, the operating history of the 200 Area ETF treatment process, the basis EPA used to establish the original delisting, and DOE-RL's proposed delisting levels and approach for waste acceptance and processing strategy development for new waste streams. EPA believes that these data and information provide a reasonable basis for EPA to grant the proposed modifications to the existing exclusion. The framework proposed by the DOE-RL for the 200 Area ETF operations, along with the updated verification requirement being proposed, ensures that the treated effluent will not pose a threat when managed as non-hazardous low-level radioactive waste in the SALDS. EPA, therefore, proposes to grant the proposed exclusion modification.

If we finalize this proposed exclusion, EPA no longer will regulate the petitioned waste as a listed hazardous waste under 40 CFR Parts 262 through 268 and the permitting standards of Part 270.

N. Relationship between today's proposed action and compliance LDR treatment standards.

Today's action proposes to exclude certain wastes from the definition of hazardous waste under the authority of 40 CFR 260.20 and 260.22. EPA is not proposing any action that establishes or imposes treatment requirements under the authority of land disposal restriction rules appearing at 40 CFR Part 268, nor is EPA proposing that the numerical delisting criteria in today's proposal necessarily satisfy existing LDR treatment standards that may be applicable to treated effluents. In general, all of the treated effluents considered in today's proposal are expected to be generated and actively managed prior to the point of exclusion, should today's proposal be finalized. As such, EPA believes that the treated effluents in question are prohibited wastes and subject to applicable LDR treatment requirements prior to land disposal at the SALDS. For disposal at SALDS, applicable LDR prohibitions and treatment requirements are pursuant to WAC 173-303-140, which incorporates by reference 40 CFR Part 268.

IV EPA's Evaluation of the Waste Information and Data for Concentrated Waste

A. What waste did DOE RL petition EPA to delist?

The DOE-RL's November 29, 2001 delisting petition also requests EPA to delist a secondary waste stream from the 200 Area ETF system, known as concentrated waste. Figure 2-2 in DOE-RL's November 2001 petition provides a simplified process flow sheet that illustrates the source of secondary waste from the 200 Area ETF treatment. For purposes of this proposed exclusion and the conditions DOE-RL must meet to demonstrate compliance with the exclusion, concentrated waste may be in the form of a brine solution in the concentrate tank (evaporator brine), or in the form of a solid powder (powder) after additional processing of evaporator brine in the thin-film dryer.

B. How is concentrated waste generated?

Concentrated waste is generated from treatment at the 200 Area ETF of the same wastewaters generate treated liquid effluents addressed in Section III of this proposal. Specific discussions of the process steps and equipment associated with the concentrated waste are found in Section 2.1 of the November 2001 delisting petition.

There are two points in the secondary treatment train of the 200 Area ETF where concentrated wastes may be excluded after meeting delisting criteria. (See Figure 2-2 in the November 2001 delisting petition for a process flow diagram of the 200 Area ETF that includes the secondary treatment train.) The first of these exclusion points is the evaporator brine tank. This exclusion location is typical for concentrated waste that must be stabilized because of radionuclide activity, mobility, or non-hazardous waste constituent issues. Concentrated waste that is a delisting candidate always will be evaluated in liquid form without consideration of any reduction in mobility or toxicity that might be afforded by stabilization. As a result, sampling of evaporator brine for purposes of demonstrating compliance with delisting criteria always will be based on total analyses, since for waste with less than 0.5 weight percent solids, total and TCLP results are identical.

The second exclusion location for concentrated waste is after drying in the thin-film dryer. Processing in the thin-film dryer generally is carried out when stabilization is not necessary for radionuclide or non-hazardous constituent immobilization, and the dried concentrated waste can be disposed of in powder form. As noted previously, not all concentrated waste will be a delisting candidate in powder form. DOE-RL has proposed a phased approach to sampling of concentrated wastes that will be processed to a dry powder in the thin-film evaporator. This phased approach is intended to provide a clear and defensible demonstrating compliance with delisting criteria for wastes that are candidates for management under today's proposed exclusion, while providing operational flexibility for conducting the necessary sampling and analysis.

The first phase of this sampling is based on obtaining total constituent analyses from the brine concentrate tank (just as with concentrated wastes that will be stabilized). These total values are then adjusted for the water that will be removed in the thin-film evaporator, based on a concentration factor that relates constituent concentration in the brine concentrate tank to the same constituent concentration in the dry powder after drying in the thin-film evaporator. This concentration factor is first established during initial verificaction sampling for a particular waste stream (see Condition (2)(b)(ii) of the proposed delisting rule language for concentrated wastes). For constituents whose delisting level is expressed in terms of a TCLP extract, this phase assumes that all constituents would totally leach from the dry powder if an actual TCLP extraction was performed on the dry powder. For these constituents, 1/20th of the total measured concentration (after adjusting for water removal in the thin-film evaporator) is compared to the TCLP-based delisting criteria. The factor of 1/20 is the dilution of a waste sample in the TCLP extraction procedure according to SW-846 Method 1311. The DOE-RL is proposing this approach when the hazardous inorganic content of a particular concentrated waste is expected to be low, and the conservative approach of assuming all constituents with TCLP-based delisting levels will completely leach will allow the costs of performing the TCLP extraction to be avoided.[13] EPA believes that this approach is highly conservative, with little or no potential for false positive errors (erroneous conclusions that the waste meets delisting limits when in fact it does not).

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[13] The proposal by the DOE RL to use totals data as a conservative bounding means of demonstrating compliance with criteria based on the TCLP is consistent with current EPA guidance. Additional details concerning EPA policy on this issue are found at http://www.epa.gov/epaoswer/hazwaste/test/faqs_tclp.htm#Total.

The second phase of sampling for concentrated waste to be managed as powder may occur when compliance with delisting criteria based on totals analysis of evaporator brine cannot be demonstrated through the first sampling phase. This phase is based on sampling and TCLP extraction (for delisting constituents whose delisting limits are expressed as TCLP extract concentrations) of the dry powder. DOE-RL intends to apply this second phase to concentrated wastes that do not meet delisting criteria when the highly conservative Phase I sampling is performed, but which DOE-RL believes are sufficiently likely to meet delisting criteria in powder form when TCLP extractions are actually performed to warrant performing the extraction. This second phase of sampling is optional. If the second sampling phase is conducted and delisting limits are met, the concentrated waste may be managed under today's proposed exclusion. If the conservative Phase 1 sampling does not demonstrate compliance with delisting levels, and DOE-RL chooses not to conduct Phase 2 sampling, then the corresponding concentrated wastes cannot be managed under today's proposed exclusion.

Concentrated wastes that cannot demonstrate compliance with delisting limits through either phase of sampling cannot be managed under terms of today's proposed exclusion, and must continue to be managed as hazardous. As noted elsewhere in today's proposal, concentrated wastes that exhibit a hazardous characteristic must always continue to be managed as hazardous.

C. What information and analyses did DOE RL submit to support this petition?

The DOE-RL is proposing to delist only a portion of concentrated wastes generated by the 200 Area ETF, specifically those wastes where process calculations demonstrate that inorganic constituents in the concentrated wastes will be below delisting levels.[14] Generally, waste managed at the 200 Area ETF is processed first in the UV/OX unit, prior to unit operations (chemical processing or waste treatment process steps) in which secondary waste is generated. Because UV/OX is highly effective in destroying or removing organics typically found in wastewaters managed by the 200 Area ETF, organics typically are not limiting factors with respect to meeting delisting criteria for concentrated waste. The DOE-RL's process for determining whether a particular concentrated waste is a viable candidate for management under today's proposed exclusion has three key steps: profiling and acceptance of the ETF influent waste stream; application of a process model to predict the concentrated waste composition; and comparison of the resulting predicted concentrated waste composition to delisting criteria. As part of the waste processing strategy for a given 200 Area ETF influent, characterization of the influent waste stream specifically includes identifying concentrations of inorganic constituents. The same influent waste profiling and acceptance process described in Section III.B of today's proposal would be used as part of DOE-RL's evaluation of whether a particular concentrated waste can be managed under today's proposed exclusion. Using these data characterizing the concentration of hazardous constituents in the 200 Area influent, DOE-RL can apply the process model described below to predict the concentration of hazardous constituents

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[14] This section refers to concentrated waste in the plural. Under the requirements of today's proposal, however, the DOE RL must manage concentrated waste on an individual waste stream-specific basis where a waste stream is considered concentrated waste from a particular waste processing strategy.

in concentrated waste, and allow DOE-RL to compare the predicted concentrations to exclusion limits in today's proposal.

The concentration of an inorganic constituent in the evaporator brine can be projected using a mass balance approach, given the concentration of the constituent in the influent and the amount of waste to be removed in the process as defined by the waste processing strategy. These calculations would be based on the removal efficiency of RO and IX unit operations, the reject rate of RO units, and the backwash volume for IX units, as well as the concentration factor for the secondary waste evaporator.[15] For waste that will be dried in the thin-film dryer and managed as a dry powder, calculations would also account for removal of water in the drying process.

When the projected concentrated waste characterization indicates inorganic constituent concentrations above the concentrated waste delisting criteria, the concentrated waste would be managed as a listed waste. When the projected concentrated waste characterization predicts the waste will be below the delisting levels, the candidate concentrated waste would be subject to the verification sampling program. If the verification sampling program confirmed that the concentrated waste meets delisting levels, the waste could then be managed as non-hazardous. Because concentrated waste is generated from inorganic contaminant process units in the 200 Area ETF, inorganic constituents are of principle interest for meeting delisting criteria. Although EPA is proposing a similar set of constituents, including organic constituents, for purposes of establishing concentrated waste delisting levels as for the 200 Area ETF liquid effluents, the EPA believes that the DOE-RL's proposed approach to make tentative concentrated waste management decisions on the basis of inorganic constituents is sound. The EPA notes, of course, that DO-RL must comply with verification sampling requirements before concentrated waste can be managed as non-hazardous.

Based on this process model, the DOE-RL has provided two data sets to illustrate how concentrated wastes would be evaluated according to the model in the November 2001 petition. One of these is representative of wastes DOE-RL would expect to manage under a delisting rulemaking, and one is representative of wastes that would continue to be managed as hazardous. Table D-1 of the November 2001 delisting petition contains powder characterization data representative of concentrated wastes proposed for delisting. Table D 1 contains summaries of data from wastes associated with processing of 242-A Evaporator PC, groundwater from the UP-1 Operable Unit pump-and-treat system (carbon tetrachloride, nitrate, uranium, and technetium are the principle constituents of concern in these contaminated environmental media), and Liquid Effluent Retention Facility (LERF) Basin 44 (representing a number of combined, low-volume,

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[15] The reject rate for reverse osmosis is the ratio of liquid volume bypassing the osmosis membrane to the liquid volume passing through the membrane, and is a measure of how concentrated waste constituents are in liquids that do not pass through the osmosis membrane. Backwash volume for ion exchange is the liquid volume used to regenerated ion exchange resins, and is also a measure of how concentrated waste constituents are in the regeneration wastewater. The concentration factor for the secondary waste processing evaporator is the ratio of liquid volume after evaporation to the liquid volume fed to the evaporator and is a measure of how concentrated waste constituents are in the evaporator effluent.

diverse waste sources).[16] Where a sufficient number of samples is available, upper 95% confidence interval bounds are calculated. These calculations were not performed for LERF Basin 44 waste, because the available data set is too small to apply statistical calculations. Where statistical calculations were performed, analytical non-detects were treated as one-half of the method detection limit (MDL), which is a standard approach to performing analyses of data reported as less than a particular detection limit.

Table D-2 of the November 2001 delisting petition is an example of a powder characterization where the waste processing strategy indicated the concentrated waste would exhibit the toxicity characteristic, and therefore be designated and managed as hazardous waste. Such concentrated waste would not be managed pursuant to this proposed delisting, and the waste would continue to be managed as a listed hazardous waste. In this example, the DOE-RL provided a limited data set generated from the Waste Sampling and Characteristic Facility (WSCF), an onsite laboratory. These data show significantly higher inorganic concentrations compared to data sets in Table D-1. For example, the mean mercury concentration as measured by the TCLP is 0.57 mg/L, compared to the toxicity characteristic designation level of 0.2 mg/L TCLP. Because this data set indicates the concentrated waste from this source exhibits the toxicity characteristic, the waste is not a delisting candidate. The purpose of this data set is only to demonstrate that the RL has sufficient understanding of this and reliably can differentiate between suitable and unsuitable delisting candidates for the concentrated waste stream.

D. How did DOE RL sample and analyze the data in its petition?

The concentrated waste considered for this delisting rulemaking was sampled from representative drums of concentrated powder waste for purposes of performing waste characterization prior to waste disposal. Drum powder samples were obtained from concentrated waste resulting from the treatment of each major wastewater type, 242-A Evaporator, UP-1 groundwater, LERF Basin 44 (compatible multi-source miscellaneous wastewaters), and analytical laboratory wastewaters. These samples were taken and analyzed in accordance with EPA sampling and analysis methods from Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, EPA-SW-846 and the 200 Area ETF waste analysis plan, which is a part of the Hanford Facility RCRA Permit. The purpose of taking the drum powder samples was to perform waste characterization prior to waste disposal.

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[16] EPA recognizes that by using LERF Basin 44 to accumulate multiple, low-volume waste streams until a sufficient volume is accumulated to process as a single treatment campaign, there may be elements of dilution as individual wastes are added to LERF Basin 44. EPA believes, however, that this implied dilution is acceptable, since regardless of dilution, the constituents will receive effective treatment in ETF. In other words, this dilution is not a means to avoid treatment, but rather inherent in the legitimate accumulation of waste streams, and the treatment function of LERF basins to equalize wastewaters so that they may be efficiently and effectively treated through a single waste processing strategy.
Further, EPA recognizes that dilution of wastewaters to a concentration that renders the wastewater amenable to treatment (as opposed to a means to avoid treatment) is not impermissible dilution. Finally, EPA believes DOE-RL's proposal to evaluate wastes streams that are a candidate for management under today's proposal as the consolidated contents of LERF Basin 44 is appropriate, since it directly evaluates waste streams in the form that will be "seen" by the 200 Area ETF after treatment in LERF basins.

The analyses of the drum powder, performed at the WSCF laboratory, consisted of both TCLP and totals. The drum powder analytical data are summarized in Table D-1 and Table D-2 of the November 2001 delisting petition. These data include analyses for all hazardous inorganics considered in today's proposed exclusion, as well as a wide range of organic constituents.[17] The tables indicate the number of times a constituent was analyzed, the number of times a constituent was reported above the MDL, the minimum, the mean, the maximum, the standard deviation, and the upper 95 percent confidence interval. The statistics were performed using a value of one-half the MDL when a constituent was not reported above the MDL.

E. What were the results of DOE RL's analysis?

In general, the characteristics of concentrated waste, discussed in Section C, are highly dependant on the influent wastewater composition and the associated treatment strategy. The DOE-RL analyses clearly acknowledge that a certain fraction of concentrated wastes will not be candidates for management under this proposed delisting, because they contain inorganic constituents in excess of toxicity characteristic designation levels. Therefore, the DOE-RL analyses are not intended to be inclusive of all possible concentrated wastes. Instead, the DOE-RL analyses are intended to illustrate a decision-making framework to be applied in real-time to make appropriate management decisions (specifically, whether a particular concentrated waste is or is not a candidate for management under this proposed delisting), and a conservative basis for a sampling and verification program. In this sense, DOE-RL's delisting proposal is a hybrid of a traditional delisting for an existing waste stream, and an up-front delisting for a waste stream that has not been generated (see Section 2.2 of the delisting guidance document at http://www.epa.gov/earth1r6/6pd/rcra_c/pd-o/delist23.pdf). The DOE-RL's proposal addresses this hybrid nature by proposing a real-time waste evaluation framework, and an on-going verification sampling program that will provide confirmation of both the decision-making methodology and compliance with delisting criteria. EPA believes that the analysis approach proposed by DOE-RL is appropriate, given the nature of diverse waste streams expected to be managed in the 200 Area ETF, the source of secondary waste, the highly variable nature of the secondary waste stream, and the different management scenarios expected for this waste stream.

F. How did EPA evaluate the risk of delisting this waste stream?

The DOE-RL petition to exclude certain 200 Area ETF secondary wastes is a new delisting action, not a revision of an existing delisting rulemaking. The EPA is proposing to evaluate the risks of this waste stream using a computer risk evaluation model consistent with current national delisting policy and guidance. The model that the EPA uses is a Windows-based software tool, the Delisting Risk Assessment Software (DRAS) program. More specifically, the DRAS model is used to calculate risk-based decision criteria to distinguish between wastes that pose unacceptable risks and must be managed as hazardous, and wastes that pose sufficiently low risk that they no longer need be managed as hazardous. The DRAS program estimates the potential

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[17] Since the cited data were prepared prior to development of DOE-RL's November, 2001 delisting petition, the selection of organic constituents for analysis of concentrated waste is not identical to the 200 Area ETF consolidated constituents list presented in Table B-1 of the petition. Never the less, these data are still useful for evaluating DOE-RL's petition.

releases of waste constituents and predicts the risk associated with those releases using several EPA models including the EPACMTP (EPA's Composite Model for Leachate Migration with Transformation Products) fate and transport model for groundwater releases. The model also considers environmental receptors consistent with modeled exposures from an unlined landfill or surface impoundments. For a detailed description of the DRAS program and the EPACMTP model, refer to 65 FR 58015, September 27, 2000. The model itself and associated documentation can be found at http://www.epa.gov/earth1r6/6pd/rcra_c/pd o/midlo.htm#risk.

Because concentrated wastes might have any of the constituents of concern considered in both the original and the proposed revision of the 200 Area ETF treated effluent delisting, the EPA is proposing to use the same treatability group approach and a similar list of delisting constituents for concentrated wastes as for treated effluent. EPA is proposing the same treatability groups for concentrated waste as defined in Table C-1 of the November 29, 2001 delisting petition for treated effluents. The constituents selected to represent each treatability group for concentrated waste is described below in Section G. In general, the DOE-RL and EPA expect the limiting constituents for concentrated wastes that are acceptable candidates for delisting will be inorganic constituents and metals. Two key points support this expectation. First, as noted in Section IV.C, organic destruction in the UV/OX unit typically occurs prior to unit operations generating concentrated waste. Second, as noted in Figure 2-2 of the November 2001 delisting petition, the principle components of the concentrated waste stream are from RO reject water and IX column backwash. To ensure that delisted concentrated wastes are fully protective, however, and to account for possible 200 Area ETF processing strategies that might place UV/OX after RO or IX process units, EPA is proposing delisting levels for representative constituents from each of the treatability groups established for the 200 Area ETF treated effluent.

In applying the DRAS model to concentrated waste, EPA is using the model only to calculate delisting levels, not to evaluate the risk of any particular secondary waste stream. As noted, the secondary waste stream is highly variable, and certain components of the waste stream are not expected to be managed under this proposed exclusion. Any concentrated wastes that are managed under this proposed delisting, however, must meet the delisting criteria calculated through application of the DRAS model, and therefore must meet acceptable risks. Today's proposal defines risk as an excess cancer risk of 1.0 x 10-5 for carcinogens, and a health index of 0.1 for toxics. As noted in the DRAS 2.0 guidance document, the DRAS model also evaluates environmental risk based on environmental exposures through a surface water pathway. These are the same values used for today's proposed delisting of 200 Area ETF treated effluent.

G. What delisting levels is EPA proposing?

EPA is proposing to establish delisting levels for concentrated wastes based on a similar set of constituents developed for today's proposed modification to the existing ETF treated effluent delisting, and application of the DRAS model. EPA is proposing the same treatability groups developed for today's proposal relating to treated effluents from the 200 Area ETF, as defined by Table 4-1 of the November 2001 delisting petition. EPA believes that the rational proposed in Section III.D for treated effluent to select a single representative constituent for each treatability group also applies to today's exclusion proposal for concentrated waste. In particular, EPA notes that meeting today's proposed exclusion limits is typically limited by inorganic constituents, each of which is in its own treatability group. Therefore, today's proposal requires explicit

consideration of each of the inorganic constituent which may limit management of certain concentrated wastes under today's proposed exclusion. The constituent property data base in the DRAS model (the internal data base that DRAS uses for the physical, chemical and toxicological properties of hazardous constituents necessary for performing delisting risk modeling), however, does not have toxicological or physical/chemical properties for all of the constituents used to represent treatability groups in the revised treated effluent delisting. EPA is selecting alternate representative constituents for the following treatability groups:

Treatability group	Treated effluent representative constituent	CAS No.	Concentrated waste representative constituent	CAS No.
1	Cresol (Cresylic acid)	1319-77-3	o-cresol	95-48-7
5, 5a, 16	Hexachlorobenzene	117-84-0	1,4 dichlorobenzene	106-46-7
8	Di-n-octyl phthalate	11-9-77-3	Bis(2-ethylhexyl)phthalate	117-87-7
10d	Carbazole	86-74-8	2,6-dinitrotoluene	606-20-2
10e	N-Nitrosodimethylamine	62-75-9	N-Nitrosodiphenylamine	86-30-6
18a	Tetrahydrofuran	109-99-9	4-chlorophenyl-phenyl ether	700-72-3
24	Ammonia	7664-41-7	Cyanide	57-12-5
25a	Tributyl phosphate	126-73-8	N/A – See Note 1	N/A

CAS = Chemical Abstract Service.

Note 1: The constituents listed in treatability group 25 can be placed in other treatability groups. There are five constituents included in treatability group 25 for treated effluent. Three constituents contain phosphate, which can be represented by treatability group 9 for miscellaneous oxygenated compounds. The toxic component of tetraethyl lead is lead, which can be represented by treatability group 22. Finally, tridecane can be considered represented by treatability group 20 for miscellaneous volatile compounds. Therefore, for purposes of DRAS modeling and establishing delisting limits, treatability group 25 is eliminated on the basis that all member constituents are directly or indirectly represented by other treatability groups.

The DRAS Version 2.0 model does not calculate delisting values for either tri-valent chromium or beryllium. Delisting values proposed in Table 2 for these two constituents have been calculated using Version 1.1 of the DRAS model, which does calculate delisting values for the groundwater ingestion pathway. For beryllium, the DRAS 1.1 model predicts a volume adjusted DAF of 480, resulting in a delisting level of 3.6 mg/L (based on the groundwater pathway). Although oxidizing conditions do exist in the UV/OX ETF unit operation (which could result in production of hexa-valent chromium), any hexa-valent chromium that may be formed is chemically converted back to tri-valent chromium during the concentrated waste processing. Anti-scaling additives, introduced at the reverse osmosis unit operation and which become part of the concentrated waste, act to convert any hexavalent chromium back to tri-valent chromium. This conversion is extremely rapid under high temperature conditions, greater than 100 °C, of the evaporator in the 200 Area ETF secondary waste treatment train (see Figure 2-2 of the November 2001 delisting petition). EPA believes the additives along with the processing conditions of the concentrate waste preclude the existence of hexavalent chromium. Because the operation parameters of the ETF are specified by the wastewater processing strategy, EPA is proposing to allow DOE-RL to demonstrate that the level of hexavalent chromium is below the DRAS calculated delisting level through one of two approaches. The first approach is based on the wastewater processing strategy containing specifications for additives to be introduced to the reverse osmosis unit (reverse osmosis processing typically occurs down-stream of the UV/OX unit, where chromium could be converted from the trivalent to the hexavalent state). Examples of such additives are sodium meta-bisulfite, or an organic based anti-scale agent, each of which act to convert hexavalent chromium to tri-valent chromium. In this approach, DOE-RL would need only to demonstrate compliance with the triavalent chromium standard, since the addition of reducing additives would eliminate the potential for hexavalent chromium to be present in the concentrated waste. The second approach is a demonstration that hexavalent chromium is below the delisting levels in the evaporator brine when the waste processing strategy does not specify additives for operation of the reverse osmosis. In this approach, RL must demonstrate compliance with delisting limits based on the hexavalent chromium value.

Similarly, the DRAS Version 2.0 model does not calculate a delisting value for fluoride. EPA is proposing to establish a delisting limit of 400 mg/L TCLP based on a drinking water MCL of 4.0, and a DAF of 100. EPA has previously established a delisting level using this methodology for a similar waste volume (836 cubic yards compared to today's proposal of 800 cubic yards). See 63 FR 70360, December 21, 1998 (proposed rule) and 64 FR 16643, April 66, 1999 (final rule) for an explanation of this approach and how the DAF of 100 was calculated.

EPA is proposing a delisting limit for arsenic somewhat different than that calculated by the DRAS model. For the groundwater ingestion pathway (which is the limiting pathway, or pathway that leads to the most stringent delisting exclusion level) for this constituent), the DRAS 2.0 model calculates a delisting value substantially below that which would result from applying a DAF to the current drinking water MCL of 10 ppb. EPA believes that the drinking water MCL is an appropriate protective goal for this key exposure pathway, and is therefore proposing to establish the arsenic delisting limit by applying the DRAS 2.0-calculated DAF to the 10 ppb MCL.

The DRAS 2.0 model predicts a limiting exposure pathway for mercury of fish ingestion. EPA does not believe that a fish ingestion scenario is a sufficiently likely mismanagement scenario with respect to delisting criteria to warrant using it as a basis for establishing delisting concentration limits. To ensure that delisted concentrated waste are not mismanaged in a way that might lead to a surface water exposure pathway, EPA is conditioning management of excluded concentrated waste on disposal in Hanford units subject to RCRA, CERCLA, or AEA authorities. EPA believes that requirements under these regulatory program include runon/runoff and other controls sufficient to preclude a surface water exposure route. Therefore, EPA is proposing to establish the delisting limit for mercury based on a groundwater inhalation pathway.

As with the treated effluent delisting exclusion modifications proposed today, the PCB delisting limits for concentrated waste are being proposed based on TSCA disposal requirements. Under 40 CFR 761.50(b)(7), radioactive PCB waste may be disposed of considering only the radioactive component if the waste meets the requirements for disposal in a facility permitted, licensed or registered by a State as a municipal or non-municipal non-hazardous waste landfill, for example, by meeting the requirements for disposal of PCB bulk product waste under 40 CFR 761.62(b)(1). This section, in turn, requires that such wastes (among other requirements) leach PCBs less than 10 µg/L measured using a procedure used to simulate leachate generation. For purposes of establishing a PCB delisting limit for concentrated wastes, EPA is proposing a limit of 0.2 mg/L, which is calculated from the 10 µg./L leachate limit by conservatively presuming all PCBs leach from the dry concentrated waste when testing using the TCLP procedure and the 20x dilution associated with the TCLP extraction.

DRAS modeling has been performed using an annual waste volume of 800 cubic yards and a disposal unit operating life of 30 years. The estimate of waste volume has been provided by DOE-RL based on expected processing rates of the 200 Area ETF, and the 30 year period selected as being consistent with the projected duration of Hanford cleanup activities requiring treatment of mixed wastewaters. The DOE-RL is proposing to delist concentrated waste as either a stabilized solid or as a dry powder after treatment in the thin-film dryer. As a means to streamline operating practices, the DOE-RL proposes to sample the concentrated waste as a concentrate in the brine concentrate tank, rather than separately sampling the stabilized solid or dry powder. Although in some instances, concentrated waste may be solidified via stabilization, no credit is taken for either the immobilization resulting from stabilization, or the dilution resulting from addition of stabilization agents. The DOE-RL will, however, account for the concentration effect of removal of water from concentrated waste in the stabilization or thin-film drying processes. Removal of water will, of course, concentrate any hazardous constituents, so this accounting for water removal is a conservative approach. EPA believes that the DOE-RL proposal is reasonable and provides a sound basis for assuring that the concentrated waste will meet delisting criteria in the form in which it will actually be delisted. The DOE-RL is also proposing to sample only for total concentration. Where delisting limits are controlled by TCLP-based exposure pathways, the DOE-RL will presume that all constituents fully leach from the waste. EPA concurs with this approach as a conservative basis for demonstrating compliance with delisting criteria. Based on the methodology described above, Table 2 lists the delisting constituents and delisting levels proposed. The justification column indicates whether the proposed delisting value is derived from DRAS Version 2.0 calculated total concentrations

(where the limiting exposure pathway is based on total waste concentrations), 20 times the total TCLP value (where the limiting exposure pathway is based on TCLP waste concentrations), or an alternate calculation method.

Table 2. Proposed Delisting Constituents and Delisting Levels for Concentrated Waste.

Treatability group	Proposed delisting constituents	CAS #	Justification	Proposed delisting level (mg/L)
1	o-cresol	95-48-7	Refer to Section IV.G. DRAS 2.0 TCLP limiting.	$3.28x10^{2}$
2	2,4,6-Trichlorophenol	88-06-2	Representing group, has a low HBL and is a hard to destroy compound, target compound in SW-846 method, PQL less than delisting level. DRAS 2.0 TCLP limiting.	$1.10x10^{2}$
3, 15, 15a	Benzene	71-43-2	Representing group, the compound with the lowest HBL, target compound in SW-846 method, PQL less than delisting level. DRAS 2.0 TCLP limiting.	$1.66x10^{1}$
4	Chrysene	218-01-9	Representing group, has a relatively low HBL and is one of the hard to destroy compounds, target compound in SW-846 method, PQL less than delisting level. Chrysene was chosen because the other constituents with lower HBLs have analytical measurement difficulties. DRAS 2.0 TCLP limiting.	$1.28x10^{1}$
5, 5a, 16	1,4-Dichlorobenzene	106-46-7	Representing group, has a relatively low HBL and is one of the hard to destroy compounds, target compound in SW-846 method, PQL less than delisting level. 1,-4-dichlorobenzene was chosen over hexachlorobenzene because of analytical measurement difficulties. DRAS 2.0 TCLP limiting.	$5.06x10^{1}$
6b, 14	Hexachlorocyclopentadiene	77-47-4	Representing group, has a low HBL and is a hard to destroy compound, target compound in SW-846 method, PQL less than delisting level. Hexachlorocyclopentadiene was chosen over 1,4-Dichloro-2-butene and Hexachlorobutadiene because of analytical measurement difficulties, and over 1,1-Dichloroethylene and Vinyl chloride because of a higher EE/O. DRAS 2.0 total limiting.	$3.06x10^{2}$

Table 2. Proposed Delisting Constituents and Delisting Levels for Concentrated Waste.				
Treatability group	Proposed delisting constituents	CAS #	Justification	Proposed delisting level (mg/L)
7a, 7b	Bis (2-Chloroisopropyl) ether	108-60-1	Representing group 7a and 7b, has a relatively low HBL and a relatively high EE/O within the treatability group, is a target compound in SW-846 method, and has an achievable PQL less than delisting level. DRAS 2.0 TCLP limiting.	$1.73x10^{1}$
8	Bis(2-ethylhexyl)phthalate	117-87-7	Representing group, has a relatively low HBL and the EE/O is highest of group, target compound in SW-846.	$1.05x10^{1}$
9, 9a	Isophorone	78-59-1	Representing group, has a relatively low HBL and the EE/O is highest of group, target compound in SW-846 method, PQL less than delisting level. Isophorone was chosen because the other constituents with lower HBLs have analytical measurement difficulties and it had the highest EE/O. DRAS 2.0 TCLP limiting.	$1.28x10^{3}$
10a	Diphenylamine	122-39-4	Representing group, has a relatively low HBL and the EE/O is close to highest of group, target compound in SW-846 method, PQL less than delisting level. Diphenylamine was chosen because other constituents with lower HBLs have analytical measurement difficulties. DRAS 2.0 TCLP limiting.	$1.08x10^{2}$
10b	p-Chloroaniline	106-47-8	Representing group, has a relatively low HBL and the EE/O is highest of group, target compound in SW-846 method, PQL less than delisting level. p-Chloroaniline was chosen over 4,4'-Methylene bis(2-chloroaniline) and o-Nitroaniline because of analytical measurement difficulties. DRAS 2.0 TCLP limiting. Representing group, has a relatively low HBL and the EE/O is close to highest of group, target compound in SW-846 method, PQL less than delisting level, the 1994 established HBL is used. Acetonitrile was chosen because it has, by far, the highest EE/O. DRAS 2.0 total (air volatilization) limiting.	$2.64x10^{1}$

Table 2. Proposed Delisting Constituents and Delisting Levels for Concentrated Waste.				
Treatability group	Proposed delisting constituents	CAS #	Justification	Proposed delisting level (mg/L)
10c	Acetonitrile	75-05-8	Representing group, has a relatively low HBL and the EE/O is close to highest of group, target compound in SW-846 method, PQL less than delisting level, the 1994 established HBL is used. Acetonitrile was chosen because it has, by far, the highest EE/O. DRAS 2.0 total (air volatilization) limiting.	$1.73x10^{2}$
10d	2,6-dinitrotoluene	606-20-2	Refer to Section IV. DRAS 2.0 TCLP limiting.	1.88
10e	N-Nitrosodiphenylamine	86-30-6	Representing group, target compound in SW-846 method DRAS 2.0 TCLP limiting. Refer to Section IV.G.	$2.48x10^{2}$
10f	Pyridine	110-86-1	Representing group, the compound with a low HBL, target compound in SW-846 method, PQL less than delisting level. Pyridine was chosen because the other constituent with a lower HBL has analytical measurement difficulties. DRAS 2.0 TCLP limiting.	6.58
11	Lindane [gamma-BHC]	58-89-9	Representing group, has a low HBL and is one of the more difficult compounds to destroy, target compound in SW-846 method, PQL less than delisting level. Lindane was chosen because of those with lower HBLs, it has the highest EE/O. DRAS 2.0 total limiting.	$9.73x10^{2}$
12	Aroclor 1016, 1221, 1232, 1242, 1248, 1254, 1260	1336-36-3	Representing group, target compound in SW-846 method, delisting level based on TSCA radioactive/bulk PCB waste disposal requirements, PQL less than delisting level	$2.00x10^{-1}$
13, 6a	Carbon tetrachloride	56-23-5	Representing group, has relatively low HBL and is the compound with the highest EE/O, target compound in SW-846 method, PQL less than delisting level. Carbon tetrachloride was chosen because the other constituent with a lower HBL has analytical measurement difficulties and it has by far the highest EE/O. DRAS 2.0 TCLP limiting.	$1.15x10^{1}$
18a	4-chlorophenyl-phenyl ether	700-72-3	Refer to Section IV.G. DRAS 2.0 TCLP limiting.	9.80

Table 2. Proposed Delisting Constituents and Delisting Levels for Concentrated Waste.

Treatability group	Proposed delisting constituents	CAS #	Justification	Proposed delisting level (mg/L)
19	Acetone	67-64-1	Representing group, has a relatively low HBL and is one of the harder to destroy compounds, target compound in SW-846 method, PQL less than delisting level. DRAS 2.0 TCLP limiting.	$6.58x10^{2}$
20	Carbon disulfide	75-15-0	Representing group, the compound with the lowest HBL, target compound in SW-846 method, PQL less than delisting level. DRAS 2.0 total limiting.	$3.65x10^{2}$
21, 22	Barium	7440-39-3	DRAS 2.0 TCLP limiting.	$6.74x10^{2}$
21, 22	Nickel	7440-02-0	DRAS 2.0 TCLP limiting.	$2.60x10^{2}$
21, 22	Silver	7440-22-4	DRAS 2.0 TCLP limiting.	$3.54x10^{1}$
21, 22	Vanadium	7440-62-2	DRAS 2.0 TCLP limiting.	$1.95x10^{2}$
21, 22	Zinc	7440-66-6	DRAS 2.0 TCLP limiting.	$2.58x10^{3}$
22, 21	Arsenic	7440-38-2	Calculated based on a volume-adjusted DAF of 88.6 from DRAS 2.0 and an MCL of 10 ppb.	$8.86x10^{-1}$
22, 21	Cadmium	7440-43-9	DRAS 2.0 TCLP limiting.	5.20
22, 21	Chromium	7440-47-3	Cr^{+3} value calculated using DRAS 1.1, groundwater ingestion pathway. Refer to Section IV.G Hexa-valent level of 1.6×10^{1} mg/L, DRAS 2.0 TCLP limiting. Refer to Section IV.I	$Cr^{+3} 1.0x10^{5}$ $Cr^{+6} 1.6x10^{1}$
22, 21	Lead	7439-92-1	DRAS 2.0 TCLP limiting based on MCL.	$6.92x10^{3}$
22, 21	Mercury	7439-97-6	DRAS 2.0 TCLP limiting based on groundwater.	$7.5x10^{-1}$
22, 21	Selenium	7782-49-2	DRAS 2.0 TCLP limiting.	$2.0x10^{1}$
23a	Fluoride	7782-41-4	See text	$8.0x10^{3}$
24	Cyanide	57-12-5	DRAS 2.0 TCLP limiting. Refer to Section IV.G	$1.25x10^{2}$

(1) Mercury analyzed using inductively coupled plasma/mass spectroscopy (ICP/MS).

CAS = Chemical Abstract Service.
DAF = dilution attenuation factor.
DRAS 2.0 = Delisting Risk Assessment Software
EE/O = electrical energy/order
HBL = health-based levels.
MCL = maximum contamination limit.
mg/L = milligrams per liter
ppb = parts per billion
PQL = practical quantitation limit
SW-846 = Test Methods for the Evaluation of Solid Waste: Physical/Chemical Methods, latest edition,

U.S. Environmental Protection Agency, Washington, D.C.
TCLP = toxicity characteristic leaching procedure

EPA recognizes that constituents selected to represent organic treatability groups do not always represent the highest toxicity and most difficult to treat constituents in each group. EPA believes, however, that the exclusion limits presented above are fully protective, in that they provide assurance that all constituents within each treatability group are sufficiently destroyed or removed to meet criteria for excluding the waste.

V What other factors did EPA consider in its evaluation?

As noted in the context of the proposed 200 Area ETF treated effluent delisting modification, EPA does not believe that there are other factors associated with the concentrated waste stream that warrant consideration under this proposed delisting.

VI How do existing concentrated waste data compare to proposed delisting levels?

EPA has compared the available analytical data for historically-generated concentrated wastes to the proposed delisting limits presented in Table 2 to evaluate whether concentrated wastes generated to date are acceptable delisting candidates. This analysis was performed for four concentrated wastes that DOE-RL expects would be candidates for management under the proposed exclusion according to the methodology presented in Section IV.C. These concentrated wastes include those generated from 200 Area ETF processing of contaminated groundwater, process condensate from the 242-A Evaporator, processing of liquids from the LERF Basin 44 (containing liquid effluents from a number of sources[18]), and wastes from the WSCF, one of the on-site analytical laboratories. In performing this analysis, EPA compared the actual total or TCLP data for the particular waste stream to the proposed delisting values (which in turn reflect limiting values calculated by the DRAS 2.0 model) where the DRAS model indicated actual waste constituents exceeded calculated delisting limits for a particular pathway.[19] The results of the analysis are outlined in the following sections.

Groundwater Concentrated Waste:

For this waste stream, DRAS 2.0 identified three constituents where existing analytical data exceeded calculated delisting limit for a total of two exposure pathways. These constituents, pathways, and EPA's analysis are as follows:

Mercury. Existing data for mercury (a maximum of 0.960 mg/kg total concentration) slightly exceed the calculated delisting limit of 0.75 mg/L based on groundwater inhalation. Because these data, based on maximum concentration only, slightly exceed the proposed delisting limit,

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[18] See footnote 18 in Section IV.C concerning the potential for waste dilution associated with waste management in the LERF basins.

[19] For constituents/pathways not enumerated in this analysis, the actual waste concentrations were below the calculated delisting limit. With respect to these constituents/pathways, the associated concentrated waste would be considered acceptable for meeting delisting criteria.

the EPA believes that this waste stream may be an acceptable candidate for management under today's proposed exclusion. For processing of groundwater in the 200 Area ETF under this proposed exclusion, the DOE-RL would have to demonstrate that influent mercury concentrations are sufficiently low that delisting limits can be met. The proposed waste acceptance and verification processes in today's proposal are intended to provide a mechanism for distinguishing between influent waste streams that might exceed delisting limits (as data for mercury do in this instance), and those likely to meet delisting limits. EPA does not believe that the small exceedance demonstrated by existing data for the maximum observed mercury concentration is a sufficient basis to categorically exclude possible future management of groundwater concentrated wastes under today's proposed exclusion.

Arsenic. Although the DRAS 2.0 model predicts the calculated delisting limit for arsenic will be exceeded, existing data demonstrate compliance with the proposed limit of 0.886 mg/L. Therefore, EPA concludes that existing data do not provide a sufficient basis to categorically exclude possible future management of such concentrated wastes under today's proposed exclusion..

Polychlorinated biphenyls. The reported PCB total concentration for this waste stream is at or below a detection limit of 0.2 mg/kg, which is the same as the proposed delisting limit. Because this constituent is not detected at or above the proposed exclusion limit, this waste stream can meet the delisting limit for polychlorinated biphenyls and is an acceptable candidate for delisting.

242-A Evaporator Process Condensate Concentrated Waste. For this waste stream, DRAS 2.0 identified the same three constituents as for groundwater concentrated waste where existing analytical data are at or exceeded calculated delisting limit for a total of two exposure pathways. The analysis presented previously for groundwater concentrated waste applies to this concentrated waste stream as well.

LERF Basin 44 Concentrated Waste. For this waste stream, DRAS 2.0 identified arsenic that exceeded calculated delisting limits. With respect to arsenic, the analysis presented above for groundwater concentrated waste applies to this concentrated waste stream as well.

WSCF Drum Concentrated Waste. For this waste stream, DRAS 2.0 indicates a significant exceedance of the calculated delisting level for mercury (12.4 mg/kg versus 0.75 mg/kg). Therefore, data presented by the DOE-RL indicate that as generated historically, this concentrated waste stream is not a delisting candidate. However, the DOE-RL may choose, through steps such as waste minimization or waste segregation, to demonstrate that future concentrated wastes from processing of WSCF wastes are able to meet delisting limits and thus be viable candidates for delisting using the waste acceptance and verification procedures in today's proposal.

VII What must DOE RL do to demonstrate compliance with the proposed exclusion?

The DOE-RL's obligations to demonstrate compliance with this proposed exclusion include two principle steps. The first step occurs before processing of a candidate influent and associated secondary waste. This step includes completion of influent waste stream characterization and

development of a waste processing strategy (refer to Section III.G in today's discussion of waste acceptance and treatment strategy development associated with delisting of treated effluent). Once this information has been compiled, the DOE-RL would have to perform a mass balance calculation based on influent inorganic concentrations and process conditions of the 200 Area ETF unit operations generating secondary waste (principally RO and IX units, with a contribution from backwash of rough filters) to calculate the concentration of inorganic constituents in the concentrated waste stream. If the concentrated waste will be managed as a dry powder after processing in the thin-film dryer, these calculations would also have to account for water removal in the thin film dryer. The DOE-RL must compare these predicted concentrated waste concentrations (either in the evaporator brine or dry powder) to applicable delisting limits. Where these projected concentrations are above delisting criteria, or exhibits a hazardous characteristic, or the influent wastewater exhibits a hazardous characteristic for inorganic constituents, the resulting concentrated waste would have to be managed as a listed (and possibly characteristic) hazardous waste. Otherwise, the DOE-RL may manage the concentrated waste as non-hazardous, subject to verification sampling requirements.

The DOE-RL proposed verification sampling requirements are similar in concept to those proposed for treated effluent. When a decision is made according to the methodology described above to manage concentrated waste under this proposed delisting action, the contents of the first concentrate tank (i.e., evaporator brine) from a particular waste stream are sampled. In addition, when the concentrated waste is managed as a dry powder, the first batch of powder also is sampled to establish a concentration factor that relates dry powder constituent concentrations to evaporator brine concentrations. These measurements will both be performed on a total basis. The rationale for establishing a concentration factor is that analysis of liquid evaporator brine is generally easier than sampling dry powder, and better analytical method performance can be obtained from liquid samples than from powder samples. Further, radiological activity will generally be lower in liquid evaporator brine, allowing less restrictive analytical procedures to be used with respect to analyst dose. Once a concentration factor is established relating powder constituent concentrations to evaporator brine concentrations, the preferred approach of sampling evaporator brine can be used to demonstrate the powder complies with delisting criteria.

EPA is proposing two options which may be used as part of the initial verification only with respect to chromium. As discussed in Section IV.G, there is a potential for hexavalent chromium in the concentrated waste stream. The first option involves including a requirement in the waste processing strategy that the reverse osmosis be operated with the introduction of an additive. This additive (for example sodium meta-bisulfite or an organic based anti-scalant) would chemically reduce the hexavalent chromium to tri-valent chromium. If the waste processing strategy does not include an additive, then the second option may be used. This option is based on a demonstration that the hexavalent chromium concentration is at or below the CR^{+6} delisting level in the concentrated waste. If the hexavalent chromium concentration is above the delisting level, the concentrated waste would have to be managed as listed hazardous waste.

Once initial verification data are obtained, the data are compared to delisting levels. For constituents with delisting levels expressed in terms of a TCLP extract, this initial comparison is based on $1/20^{th}$ of the total measured concentration, conservatively assuming that all such constituents completely leach from the powder. If this initial verification sampling indicates

delisting criteria have not been met, the concentrated waste continues to be managed as hazardous waste. However, for concentrated waste to be managed as a powder, the DOE-RL may elect to perform actual TCLP testing of the initial batch of powder to demonstrate compliance with delisting criteria based on TCLP extract data. If the totals or TCLP data indicate compliance with delisting criteria, the concentrated waste can be managed as non-hazardous subject to subsequent verification sampling requirements. After initial verification is complete, the DOE-RL must sample every 15th concentrate tank batch. For subsequent verification sampling of concentrated waste in powder form, the DOE-RL may use either totals data and an assumption that all delisting constituents with TCLP based criteria fully leach, or perform TCLP extraction and use extract data for such constituents. EPA believes that this approach is conservative, but allows the DOE-RL a degree of operational flexibility. When the concentrated waste is managed as a dry powder, the powder is sampled annually to verify or update the concentration factor used for relating evaporator brine and powder concentrations.

If any subsequent verification results indicate delisting criteria are not met, the concentrated waste must be managed as hazardous waste. The DOE-RL may choose to modify the waste processing strategy as a means to again meet delisting criteria, provided that the entire waste acceptance/verification sampling process for concentrated waste is repeated as if for a new influent/treatment strategy combination.

VIII How must DOE RL operate the treatment unit?

Under today's proposal, the DOE-RL would be required to operate the 200 Area ETF according to the waste processing strategies required by this proposed exclusion. Although not a specific condition of this proposed delisting, the DOE-RL also must operate the 200 Area ETF in compliance with applicable RCRA regulations, the requirements of the Hanford Facility RCRA Permit WA7890008967, and the requirements of the State Waste ST4500 Permit.

IX What must DOE RL do if the process changes?

EPA expects that the 200 Area ETF treatment technologies will evolve and/or change over the operating life of the unit in support of Hanford Facility cleanup. EPA is proposing an exclusion condition (Condition 1(b)) that will allow the DOE-RL to modify the process model for the 200 Area ETF used to calculate the initial concentration of concentrated waste with written EPA approval to reflect such changes. Such changes to the process model will not require modifications to the exclusion rule. EPA has also included a re-opener clause that also provides a basis for modification of this proposed exclusion to reflect substantial changes to the 200 Area ETF or 200 Area ETF performance.

X How must DOE RL manage the delisted wastes for disposal?

EPA is proposing that concentrated wastes managed under today's proposed exclusion be land disposed of on-site in a unit permitted for disposal by Ecology pursuant to the state's authorized dangerous waste program, a unit authorized for disposal by EPA pursuant to Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) authority, or in a disposal unit under AEA authority pursuant to applicable DOE orders. EPA is proposing this requirement to ensure that actual waste management practices for the excluded waste are consistent with management scenarios analyzed in this proposal. EPA notes that from a jurisdictional

standpoint, the wastes in question will continue to be low-level waste subject to management under authority of the AEA, pursuant to DOE orders.

XI What data must DOE RL submit?

EPA believes that the proposed methodology in this exclusion provides a sound and robust basis to accommodate the diverse waste streams expected to be managed by the 200 Area ETF under this proposed exclusion. The proposed delisting framework was developed in this manner because the DOE-RL specifically anticipate some concentrated wastes will exceed delisting criteria and will continue to be managed as hazardous waste. EPA does not believe a reporting requirement for each instance when delisting criteria are exceeded is necessary. EPA is proposing to require that the DOE-RL maintain records of initial decisions (determinations required by condition (1)(a)) to manage concentrated waste under terms of this proposed delisting and records of all verification sampling results. In addition, EPA is proposing to require that the DOE-RL provide an annual report summarizing specific waste streams treated by the 200 Area ETF where concentrated wastes are managed under the terms of this exclusion and associated verification data. This report will allow EPA to evaluate the efficacy of the framework proposed today, and to identify where modifications may be made to ensure delisting criteria are met on a long-term, on-going basis, and to take any appropriate response actions. Although EPA believes today's proposal is a sound approach to ensuring and documenting that concentrated wastes managed as excluded wastes comply with delisting limits, EPA also believes it prudent to periodically review performance of the proposed methodology.

The DOE-RL must also disclose new or different information related to a condition at the 200 Area ETF or disposal of the waste if the information is pertinent to the delisting. This provision will allow EPA to re-evaluate the exclusion if new or additional information becomes available to the Agency. The EPA will evaluate the information on which we based the decision to see if the decision is still correct, or if circumstances have changed so that the information is no longer correct or would cause EPA to deny the petition if presented. This provision expressly requires the DOE-RL to report site conditions that differ from those presented in the rulemaking petition within 10 days of discovery. If EPA discovers such information itself or from a third party, the EPA can act on the information as appropriate. The language being proposed is similar to those provisions found in RCRA regulations governing no-migration petitions (40 CFR 268.6).

The EPA believes that we have the authority under RCRA and the Administrative Procedures Act (APA), 5 USC 551 (1978) et seq., to re-open a delisting decision. We may re open a delisting decision when we receive new information that calls into question the assumptions underlying the delisting.

The Agency believes a clear statement of its authority in delistings is merited in light of Agency experience. See Reynolds Metals Company at 62 FR 37694 (July 14, 1997) and 62 FR 63458 (December 1, 1997), where the delisted waste leached at greater concentrations in the environment than the concentrations predicted when conducting the TCLP, thus leading the Agency to repeal the delisting. If an immediate threat to human health and the environment presents itself, EPA will continue to address these situations case by case. Where necessary, EPA will make a good cause finding to justify emergency rulemaking. See APA Section 553(b).

A. What did EPA conclude about DOE RL's analysis?

After reviewing DOE-RL's petition, the EPA concludes that (1) for concentrated waste determined to be a delisting candidate according to the proposed evaluation and verification framework, no RCRA hazardous waste constituents are likely to be present in concentrated waste above health-based delisting levels; and (2) the same petitioned waste does not exhibit any of the characteristics of ignitability, corrosivity, reactivity, or toxicity (refer to 40 CFR 261.21, 261.22, 261.23, and 261.24, respectively). In addition, EPA considered other factors or criteria enumerated in Section I.B that could cause the wastes to be hazardous under RCRA. Although today's proposal considers certain P-listed waste numbers which are defined by 40 CFR 261.33 as acutely hazardous, concentrated waste which meets conditions in today's proposal is no longer acutely hazardous and maybe excluded from the definition of hazardous waste. The remaining factors discussed in Section I.B are considered as part of the process used to establish exclusion limits or the verification sampling program applicable to the wastes proposed for exclusion.

Because the treated waste managed under this exclusion is a low-level waste not subject to EPA regulatory control, the waste must still be managed in accordance with DOE orders.

XII What is EPA's evaluation of this delisting petition?

We have reviewed DOE-RL's petition, including the operating history of the 200 Area ETF treatment process with respect to secondary waste, and DOE-RL's proposed approach for waste acceptance, processing strategy development for new waste streams, and verification sampling. EPA believes that these data and this approach provide a reasonable basis for EPA to grant the proposed exclusion. The framework proposed by the DOE-RL for 200 Area ETF operations, and the associated concentrated waste verification requirements, ensures that concentrated waste in the form of evaporator brine or thin film dryer powder will not pose a threat when managed as non-hazardous low-level waste. EPA, therefore, proposes to grant the proposed exclusion modification.

If we finalize this proposed exclusion, we will no longer regulate the petitioned waste as listed hazardous waste under 40 CFR Parts 262 through 268 and the permitting standards of Part 270.

A. Relationship between today's proposed action and compliance with Land Disposal Restriction (LDR) treatment standards.

Today's action proposes to exclude certain wastes from the definition of hazardous waste under the authority of 40 CFR 260.20 and 260.22. EPA is not proposing any action that establishes or imposes treatment requirements under the authority of LDR rules appearing at 40 CFR Part 268, nor is EPA proposing that the numerical delisting criteria in today's proposal necessarily satisfy existing LDR treatment standards that may be applicable to concentrated wastes.
EPA believes concentrated wastes managed under today's proposed exclusion represent a change in treatability group from the wastewater form managed by the 200 Area ETF. Concentrated wastes excluded as a powder after drying in the thin-film evaporator are clearly in a non-wastewater form. Similarly, concentrated wastes excluded as evaporator brine concentrate are no longer wastewaters, based on the density and concentration of non-hazardous constituent (principally nitrate and sulfate salts). Because generation of concentrated wastes in powder form constitutes a change in treatability group from wastewater to non-wastewater, there is a new

point of generation for powder at the point of exclusion under today's proposal. Therefore, concentrated wastes managed under today's exclusion, if finalized, would not be hazardous waste and therefore not be prohibited wastes or subject to LDR treatment standards. Wastes not managed under today's proposal, of course, would remain hazardous and subject to applicable LDR prohibitions and treatment requirements pursuant to WAC 173-303-140, which incorporates by reference 40 CFR Part 268.

STATUTORY AND EXECUTIVE ORDER REVIEWS [UPDATE AS OF JUNE 20, 2003]

1. Executive Order 12866

Under Executive Order 12866 (58 FR 51735, October 4,1993), the Agency must determine whether the regulatory action is "significant", and therefore subject to OMB review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may: (1) have an annual effect on the economy of $100 million or more, or adversely affect in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order. It has been determined that this proposed is not a "significant regulatory action" under the terms of Executive Order 12866 and is therefore not subject to OMB review.

2. Paperwork Reduction Act

The Paperwork Reduction Act, 44 USC 3501, et seq., is intended to minimize the reporting and record-keeping burden on the regulated community, as well as to minimize the cost of Federal information collection and dissemination. In general, the Act requires that information requests and record-keeping requirements affecting ten or more non-Federal respondents be approved by OPM. Since the proposed Rule does not establish or modify any information or record-keeping requirements for the regulated community, it is not subject to the provisions of the Paperwork Reduction Act.

3. Regulatory Flexibility

The Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA), 5 USC 601 et. seq., generally requires federal agencies to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions. For purposes of assessing the impacts of today's rule on small entities, small entity is defined as: (1) a small business, as codified in the Small Business Size Regulations at 13 CFR part 121 ; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field. EPA has determined that this action will not have a significant impact on small entities because the proposed rule will only have the effect of impacting the waste management of waste proposed for conditional delisting at the Hanford facility in the State of Washington. After considering the economic impacts of today's proposed rule, I certify that this action will not have a significant economic impact on a substantial number of small entities. We continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

4. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act (UMRA) of 1995 (Pub. L. 104-4) establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any year. Before promulgating an EPA rule for which a written statement is needed, Section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why the alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

This proposed rule contains no Federal mandates (under the regulatory provisions of Title II of the UMRA) for State, local or tribal governments or the private sector. It imposes no new enforceable duty on any State, local or tribal governments or the private sector. Similarly, EPA has also determined that this proposed rule contains no regulatory requirements that might significantly or uniquely affect small government entities. Thus, the requirements of section 203 of the UMRA do not apply to this rule.

5. Executive Order 13132: Federalism

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among various levels of government."

This proposed rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among various levels of government, as specified in Executive Order 13132. This proposed rule addresses the conditional delisting of waste at the federal Hanford Facility. Thus, Executive Order 13132 does not apply to this rule. Although Section 6 of the Executive Order 13132 does not apply to this proposed rule, EPA did consult with representatives of State and local governments in developing this rule. In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between

EPA and State and local governments, EPA specifically solicits comment on this proposed rule from State and local officials.

6. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

Executive Order 13175, entitled "Consultation and Coordination with Indian Tribal Governments" (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." This proposed rule does not have tribal implications, as specified in Executive Order 13175. The rule proposes to conditionally delist certain waste streams at the federal Hanford Facility and does not establish any regulatory policy with tribal implications. Thus, Executive Order 13175 does not apply to this proposed rule. EPA specifically solicits additional comment on this proposed rule from tribal officials.

7. Executive Order 13045: Protection of Children from Environmental Health and Safety Risks

Executive Order 13045 applies to any rule that: (1) is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health

or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This proposed rule is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866 and because the Agency does not have reason to believe the environmental health or safety risks addressed by this proposed action present a disproportionate risk to children. The proposed rule concerns the proposed conditional delisting of certain waste streams at the Hanford facility.

8. Executive Order 13211: Actions that Significantly Affect Energy Supply, Distribution, or Use

This rule is not subject to Executive Order 13211, "Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use" (66 Fed. Reg. 28355, May 22, 2001) because it is not a "significant regulatory action" as defined under Executive Order 12866.

9. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTAA"), Public Law No. 104-113, 12(d) (15 U.S.C. 272) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus bodies. The NTAA directs EPA to provide Congress, through the OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. This proposed rulemaking does not involve "technical standards" as defined by the NTAA. Therefore, EPA is not considering the use of any voluntary consensus standards. EPA welcomes comments on this aspect of the proposed rulemaking and, specifically, invites the public to identify potentially-applicable voluntary consensus standards and to explain why such standards should be used in this regulation. [Still waiting for OGC input on this interpretation so this language may need to be changed.]

10. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations

To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency must make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands. Because this proposed rule addresses the conditional delisting of certain waste streams at the Hanford Facility, with no anticipated

significant adverse human health or environmental effects, the rule is not subject to Executive Order 12898.
LIST OF SUBJECTS IN 40 CFR PART 261

Hazardous Waste, Recycling, and Reporting and record keeping requirements.
Authority: Sec. 3001(f) RCRA, 42 USC § 6921(f)

Date

L. John Iani
Regional Administrator

For the reasons set out in the preamble, 40 CFR Part 261 is proposed to be amended as follows:

PART 261 - IDENTIFYING AND LISTING HAZARDOUS WASTE

1. The authority citation for Part 261 continues to read as follows:

AUTHORITY: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

2. In Table 2, of Appendix IX of Part 261, it is proposed to replace the existing entry for "DOE RL, Richland, WA" with the following:

Table 2. Wastes Excluded From Specific Sources

Facility	Address	Waste Description
Department of Energy, Richland Operations (DOE-RL)	**Richland, Washington**	Treated effluents bearing the waste numbers identified below, from the 200 Area ETF located at the Hanford Facility, at a maximum generation rate of 210 million liters per year, subject to Conditions 1-7: This conditional exclusion includes EPA Hazardous Waste Nos. F001, F002, F003, F004, F005 and F039. In addition, all other U- and P-listed waste numbers that meet the following criteria: • The U/P listed substances has a treatment standard established for wastewater forms of F039 multi-source leachate under 40 CFR 268.40,"Treatment Standards for Hazardous Wastes"; and • The as-generated waste stream prior to treatment in the 200 Area Effluent Treatment Facility (200 Area ETF) is in the form of dilute wastewater containing a maximum of 1.0 weight percent of any hazardous constituent. (1) Waste Influent Characterization and Processing Strategy (a) Prior to treatment of any waste stream in the 200 Area ETF, the DOE-RL must: (i) Complete sufficient characterization of the waste stream to demonstrate that the waste stream is within the treatability envelope of 200 Area ETF as specified in Tables C-1 and C-2 of the delisting petition dated November 29, 2001. Results of the waste stream characterization and the treatability evaluation must be in writing and placed in the facility operating record, along with a copy of the November 29, 2001 petition. Waste stream characterization may be carried out in whole or in part using the waste analysis procedures in the Hanford Facility RCRA Permit, WA7890008967;

		(ii) Prepare a written waste processing strategy specific to the waste stream, based on the ETF process model documented in the November 29, 2001 petition. (b) DOE-RL may modify the 200 Area ETF treatability envelope specified in Tables C-1 and C-2 of the November 29, 2001 delisting petition to reflect changes in treatment technology or operating practices upon written approval of the Regional Administrator. (c) DOE-RL shall conduct all 200 Area ETF treatment operations for a particular waste stream according to the written waste processing strategy, as may be modified by Condition 2. (d) The following definitions apply: (i) A waste stream is defined as all wastes that meet the 200 Area ETF waste acceptance criteria as defined by the Hanford Facility RCRA Permit, WA7890008967 and are managed under the same 200 Area ETF waste processing strategy. (ii) A waste processing strategy is defined as a specific 200 Area ETF unit operation configuration, primary operating parameters and expected maximum influent total dissolved solids (TDS) and total organic carbon (TOC). Each waste processing strategy shall require monitoring and recording of treated effluent conductivity for purposes of Condition (2)(b)(i)(E), and for monitoring of primary operating are in accordance with the associated waste processing strategy. (iii) Primary operating parameters are defined as ultraviolet oxidation (UV/OX) peroxide addition rate, reverse osmosis reject ratio, and processing flow rate as measured at the 200 Area ETF surge tank outlet. (iv) Key unit operations are defined as filtration, UV/OX, reverse osmosis, ion exchange, and secondary waste treatment. (2) Testing. DOE-RL shall perform verification testing of treated effluents according to conditions (a), (b), and (c) below. (a) Sample collection and analysis, including quality control (QC) procedures, must be performed according to current version of SW-846 or other EPA-approved methodologies. DOE-RL shall maintain a written sampling and analysis plan in the facility operating record. Results of all sampling and analysis, including quality assurance (QA)/QC information, shall be placed in the facility operating record. (b) Initial verification testing. (i) Verification sampling shall consist of a representative sample of one filled effluent discharge tank, analyzed for all constituents in Condition (5), and for conductivity for purposes of establishing a conductivity baseline with respect to Condition (2)(b)(i)(E). Verification sampling shall be required under each of the following conditions: (A) Any new or modified waste processing strategy; (B) Influent wastewater total dissolved solids or total organic carbon concentration increases by an order of magnitude or more above values established in the waste processing strategy; (C) Changes in primary operating parameters; (D) Changes in influent flow rate outside a range of 150 to 570 liters per minute; (E) Increase greater than a factor of tem (10) in treated effluent conductivity (conductivity changes indicate changes in dissolved ionic constituents, which in turn are a good indicator of 200 Area ETF treatment efficiency). (F) Any failure of initial verification required by this condition, or subsequent verification required by Condition (2)(c). (ii) Treated effluents shall be managed according to Condition 3. Once Condition (3)(a) is satisfied, subsequent verification testing shall be performed according to Condition (2)(c). (c) Subsequent Verification: Following successful initial verification associated with a specific waste processing strategy, DOE-RL must continue to monitor primary operating parameters, and collect and analyze representative samples from every fifteenth (15th) verification tank filled with 200 Area ETF effluents processed according to the associated waste processing strategy. These representative samples must be analyzed prior to disposal of 200 Area ETF effluents for all constituents in Condition (5). Treated effluent from tanks sampled according to this condition must be managed according to Condition (3). (3) Waste Holding and Handling: DOE-RL must store as hazardous waste all 200 Area ETF effluents subject to verification testing in Conditions (2)(b) and (2)(c), that is, until

		valid analyses demonstrate Condition (5) is satisfied. (a) If the levels of hazardous constituents in th samples of 200 Area ETF effluent are equal to or below the levels set forth in Condition (5), the 200 Area ETF effluents are not listed as hazardous wastes provided they are disposed of in the State Authorized Land Disposal Site (SALDS) according to applicable requirements and permits. Subsequent treated effluent batches shall be subject to verification requirements of Condition (2)(c). (b) If hazardous constituent levels in any representative sample collected from a verification tank exceed any of the delisting levels set in Condition (5), DOE-RL must: (i) Review waste characterization data, and review and change accordingly the waste processing strategy as necessary to ensure subsequent batches of treated effluent do not exceed delisting criteria; (ii) Retreat the contents of the failing verification tank; (iii) Perform verification testing on the retreated effluent. If constituent concentrations are at or below delisting levels in Condition (5), the treated effluent are not listed hazardous waste provided they are disposed at SALDS according to applicable requirements and permits (except as provided pursuant to Condition (7)), otherwise repeat the requirements of Condition (3)(b). (iv) Perform initial verification sampling according to Condition (2)(b) on the next treated effluent tank once testing required by Condition (3)(b)(iii) demonstrates compliance with delisting requirements. (4) Re-opener Language (a) If, anytime before, during, or after treatment of waste in the 200 Area ETF, DOE-RL possesses or is otherwise made aware of any data (including but not limited to groundwater monitoring data) relevant to the delisted waste indicating that the treated effluent no longer meets delisting criteria (excluding recordkeeping and data submissions required by Condition (6)), or that groundwater affected by discharge of the treated effluent exhibits hazardous constituent concentrations above health-based limits, DOE-RL must report such data, in writing, to the Regional Administrator within 10 days of first possessing or being made aware of that data. (b) Based on th information described in paragraph (4)(a) or any other relevant information received from any source, the Regional Administrator will make a preliminary determination as to whether the reported information requires Agency action to protect human health or the environment. Further action could include suspending, revoking the exclusion, or other appropriate response necessary to protect human health and the environment. (c) If the Regional Administrator determines that the reported information does require Agency action, thee Regional Administrator will notify DOE-RL in writing of th actions the Regional Administrator believes are necessary to protect human health and the environment. The notice shall include a statement of the proposed action and a statement providing DOE-RL with an opportunity to present information as to why the proposed Agency action is not necessary or to suggest an alternative action. DOE-RL shall have 30 days from the date of the Regional Administrator's notice to present the information. EPA may require DOE-RL to take immediate action prior to the 30-day response period upon a finding by EPA that conditions may pose an imminent and substantial endangerment of human health and the environment that requires an immediate response action. (d) If after 30 days from EPA's written notification in paragraph above, DOE-RL presents no further information, the Regional Administrator will issue a final written determination describing the Agency actions that are necessary to protect human heath or the environment. Any required action described in the Regional Administrator's determination shall become effective immediately, unless the Regional Administrator provides otherwise. (5) Delisting Levels: All total constituent concentrations in treated effluents managed under this exclusion musts be equal to or less than the following levels, expressed as mg/L: Inorganic Constituents Ammonia - 6.0 Barium - 1.6

		Beryllium - 4.5 x 10-2 Nickel - 4.5 x 10-1 Silver - 1.1 x 10-1 Vanadium - 1.6 x 10-1 Zinc - 6.8 Arsenic - 1.5 x 10-2 Cadmium - 1.1 x 10-2 Chromium - 6.8 x 10-2 Lead - 9.0 x 10-2 Mercury - 6.8 x 10-3 Selenium - 1.1 x 10-1 Fluoride - 1.2 Cyanides - 4.8 x 10-1 Organic Constituents: Cresol - 1.2 2,4,6 Trichlorophenol - 3.6 x 10-1 Benzene - 6.0 x 10-2 Chrysene - 5.6 x 10-1 Hexachlorobenzne - 2.0 x 10-3 Hexachlorocyclopentadiene - 1.8 x 10-1 Dichloroisopropyl ether [Bis(2-Chloroisopropyl) either] - 6.0 x 10-2 Di-n-octylphthalate - 4.8 x 10-1 1-Butanol - 2.4 Isophorone - 4.2 Diphenylamine - 5.6 x 10-1 p-Chloroaniline - 1.2 x 10-1 Acetonitrile - 1.2 Carbazole - 1.8 x 10-1 N-Nitrosodimethylamine - 2.0 x 10-2 Pyridine - 2.4 x 10-2 Lindane [gamma-BHC] - 3.0 x 10-3 Arochlor [total of Arochlors 1016, 1221, 1232, 1242, 1248, 1254, 1260] - 5.0 x 10-4 Carbon tetrachloride - 1.8 x 10-2 Tetrahydrofuran - 5.6 x 10-1 Acetone - 2.4 Carbon disulfide - 2.3 Tributyl phosphate - 1.2 x 10-1 (6) Recordkeeping and Data Submittals. (a) DOE-RL shall maintain records of all waste characterization, and waste processing strategies required by Condition (1), and verification sampling data, including QA/QC results, in the facility operating record for a period of no less than three (3) years. However, this period is automatically extended during the course of any unresolved enforcement action regarding the 200 Area ETF or as requested by EPA. (b) No less than thirty (30) days after receipt of verification data indicating a failure to meet delisting criteria of Condition (5), DOE-RL shall notify the Regional Administrator. This notification shall include a summary of waste characterization data for the associated influent, verification data, and any corrective actions taken according to Condition (3)(b)(i). (c) Records required by Condition (6)(a) must be furnished on request by EPA or the State of Washington and made available for inspection. All data must be accompanied by a signed copy of the following certification statement to attest to the truth and accuracy of the data submitted: "Under civil and criminal penalty of law for the making or submission of false or fraudulent statements or representations (pursuant to the applicable provisions of the Federal Code, which include, but may not be limited to, 18 USC 1001 and 42 USC 6928. I certify tht the information contained in or accompanying this document is true, accurate, and complete.

		As to the (those) identified section(s) of the document for which I cannot personally verify its (their) truth and accuracy, I certify as the official having supervisory responsibility of the persons who, acting under my direct instructions, made th verification that this information is true, accurate, and complete. In the event that any of this information is determined by EPA in its sole discretion to be false, inaccurate, or incomplete, and upon conveyance of this fact to DOE-RL, I recognize and agree that this exclusion of waste will be void as if it never had effect or to the extent directed by EPA and that the DOE-RL will be liable for any actions taken in contravention of its RCRA and CERCLA obligations premised upon DOE-RL's reliance on the void exclusion." (7) Treated Effluent Disposal Requirements. DOE-RL may at any time propose alternate reuse practices for treated effluent managed under terms of this exclusion in lieu of disposal at the SALDS. Such proposals must be in writing to the Regional Administrator, and demonstrate that the risks and potential human health or environmental exposures from alternate treated effluent disposal or reuse practices do not warrant retaining the waste as a hazardous waste. Upon written approval by EPA of such a proposal, non-hazardous treated effluents may be managed according to the proposed alternate practices in lieu of the SALDS disposal requirement in paragraph (3)(a). The effect of such approved proposals shall be explicitly limited to approving alternate disposal practices in lieu of the requirements in paragraph (3)(a) to dispose of treated effluent in SALDS.
Department of Energy, Richland Operations (DOE-RL)	**Richland, Washington**	Concentrated (secondary) wastes bearing the waste numbers identified below, from the 200-Area ETF located at the Hanford facility, at a maximum generation rate of 800 cubic yards per year, subject to conditions 1-6: This conditional exclusion includes EPA Hazardous Waste Nos. F001, F002, F003, F004, F005 and F039. In addition, all other U- and P-listed waste numbers that meet the following criteria: • The U/P listed substances has a treatment standard established for wastewater forms of F039 multi-source leachate under 40 CFR 268.40,"Treatment Standards for Hazardous Wastes"; and • The as-generated waste stream prior to treatment in the 200 Area Effluent Treatment Facility (200 Area ETF) is in the form of dilute wastewater containing a maximum of 1.0 weight percent of any hazardous constituent. (1) Waste Influent Characterization and Processing Strategy Definition: (a) Prior to treatment of any waste stream in the 200 Area ETF for which DOE RL elects to manage the associated concentrated secondary wastes under terms of this exclusion, the DOE-RL must: (i) Complete sufficient characterization of the influent waste stream to demonstrate that the waste stream is within the treatability envelope of 200 Area ETF as specified in Tables C-1 and C-2 of the delisting petition dated November 29, 2001. Results of the waste stream characterization and the treatability evaluation must be in writing and placed in the facility operating record, along with a copy of the November 29, 2001 petition. Waste stream characterization may be carried out in whole or in part using the waste analysis procedures in the Hanford Facility RCRA Permit, WA7890008967; (ii) Prepare a written waste processing strategy specific to the waste stream, based on the ETF process model documented in the November 29, 2001 petition. The waste processing strategy shall be based on and specify either processing in the thin-film dryer or stabilization of evaporator brine concentrate to remove free-standing liquids as defined by the Paint Filter Test, EPA SW-846 Method 9095. Management of concentrated wastes under this exclusion shall be contingent on processing of wastes to a solid physical form that does not contain free-standing liquids. The waste processing strategy shall consider the potential for hexavalent chromium in the concentrated waste. One of two options may be used to demonstrate that chromium in the concentrated waste is below the delisting levels. The first option requires that the waste processing strategy specify sufficient reducing additive be introduced as part of reverse osmosis operation to fully reduce hexavalent chromium to trivalent chromium. In this instance, compliance with delisting criteria may be based on the Cr+3 delisting value. The second option must be used if the waste processing strategy does not include a reducing additive. Under the second option, hexavalent chromium must be shown to be at or below the Cr^{+6} delisting

		level. (iii) Prepare a written mass balance analysis for inorganic waste constituents in the 200 Area ETF evaporator brine concentrate tank based on the waste characterization and waste processing strategy required by Conditions (1)(a)(i) and (1)(a)(ii), respectively, and the removal efficiencies for inorganics in Table C-1 of the November 2001 delisting petition. Concentrated wastes that the mass balance analysis indicates will to be above delisting criteria of Condition (4) or that exhibit a hazardous characteristic may not be managed under this exclusion and must continue to be managed according to applicable hazardous waste management requirements. (b) DOE-RL may modify the 200 Area ETF treatability envelope specified in Tables C-1 and C-2 of the November 29, 2001 delisting petition and required by Condition (1)(a)(i), as well as the inorganic removal efficiencies required by Condition (1)(a)(iii) to reflect changes in treatment technology or operating practices upon written approval of the Regional Administrator. (c) DOE-RL shall conduct all 200 Area ETF treatment operations for a particular waste stream according to the written waste processing strategy. (d) The following definitions apply: (i) A waste stream is defined as all wastes that meet the 200 Area ETF waste acceptance criteria as defined by the Hanford Facility RCRA Permit, WA7890008967 and are managed under the same 200 Area ETF waste processing strategy. (ii) A waste processing strategy is defined as a specific 200 Area ETF unit operation configuration, primary operating parameters and expected maximum influent total dissolved solids (TDS) and total organic carbon (TOC). Each waste processing strategy shall require monitoring and recording of primary operating parameters as necessary to demonstrate that 200 Area ETF operations are in accordance with the associated waste processing strategy. (iii) Primary operating parameters are defined as ultraviolet oxidation (UV/OX) peroxide addition rate, reverse osmosis reject ratio, and processing flow rate as measured at the 200 Area ETF surge tank outlet. (iv) Key unit operations are defined as filtration, ultraviolet oxidation, reverse osmosis, ion exchange, and secondary waste treatment. (2) Testing. DOE-RL shall perform verification testing of concentrated wastes according to Conditions (a), (b), and (c) below. (a) Sample collection and analysis, including quality control (QC) procedures, must be performed according to the current version of SW-846 or other EPA-approved methodologies. DOE-RL shall maintain a written sampling and analysis plan in the facility operating record. Results of all sampling and analysis, including QA/QC information, shall be placed in the facility operating record. (b) Initial verification testing. (i) Verification sampling shall consist of a representative sample of the evaporator brine concentrate tank, analyzed for all constituents for which delisting criteria are established in Condition (5) including hexavalent chromium when the second approach for demonstrating compliance with delisting requirements for chromium is invoked from paragraph (1)(a)(ii). Verification sampling shall be required under each of the following conditions: (A) Any new or modified waste processing strategy; (B) Influent wastewater total dissolved solids or total organic carbon concentration increases by an order of magnitude or more above values established in the waste processing strategy; (C) Changes in primary operating parameters (use of key unit operations, sequence of process unit operations, or unit operation operating conditions such as reverse osmosis (RO) reject rate, UV/OX peroxide addition rate, etc.); (D) Changes in influent flow rate outside a range of 150 to 570 liters per minute. (E) Any failure of initial verification required by this condition, or subsequent verification required by Condition (2)(c). (ii) For concentrated waste that DOE-RL elects to process through the thin-film dryer and manage as a dry powder, initial verification also shall include a totals analysis of the finished powder for all constituents for which delisting criteria are established in Condition (4) including hexavalent chromium when the second approach for demonstrating compliance with delisting requirements for chromium is invoked from paragraph (1)(a)(ii), followed by calculation of a concentration factor for each

		constituent. For purposes of this condition, the concentration factor shall be defined as the ratio of each contaminant concentration in the dry powder to that in the evaporator brine. Concentration factors so defined are expressed in units of liters/kilogram (L/kg). The concentration factor for hexavalent chromium is the same as for total chromium. (iii) For concentrated wastes where DOE-RL elects to demonstrate compliance with delisting criteria through analysis of evaporator brine, the measured totals concentration of each delisting constituent shall be multiplied by the concentration factor calculated in Condition (2)(b)(ii), then compared to the delisting criteria in the Phase 1 sampling column of Condition (4). For concentrated wastes where DOE-RL elects to demonstrate compliance with delisting criteria through analysis of dry powder, the measured total or TCLP extract of each delisting constituent (as indicated in the Phase II sampling column of Condition 4) shall be compared to the delisting criteria in the Phase II column Condition 4. This condition applies to both initial and subsequent verification. (iii) Concentrated waste where initial verification sampling demonstrates the concentration of any constituent in the evaporator brine (where DOE-RL elects to manage concentrated waste without processing in the thin-film dryer) or dry powder (where DOE-RL elects to manage concentrated waste in powder form) is above the delisting level established in Condition (4) or that exhibits a hazardous characteristic may not be managed under this exclusion, and must be managed according to applicable hazardous waste management requirements. (iv) DOE RL must store as hazardous waste all 200 Area ETF concentrated wastes subject to verification testing in Conditions (2)(b) and (2)(c), that is, until valid analyses demonstrate Condition (4) is satisfied. Upon completion of valid analyses that demonstrate that delisting verification parameter concentrations are at or below the delisting level established in Condition (4) and that the wastes do not exhibit a hazardous characteristic, the wastes may be managed as non-hazardous subject to Condition (6). (c) Subsequent Verification: Following successful initial verification associated with a specific waste processing strategy, DOE-RL must continue to monitor primary operating parameters, and collect and analyze representative samples from every fifteenth (15th) filled evaporator brine concentrate tank processed according to the associated waste processing strategy. Concentrated waste where subsequent verification sampling demonstrates the concentration of any constituent in the evaporator brine (where DOE-RL elects to manage concentrated wastes without processing in the thin-film dryer) or dry powder (where DOE-RL elects to manage concentrated wastes in powder form) is above the delisting level established in Condition (4) or that exhibits a hazardous characteristic may not be managed under this exclusion, and must be managed according to applicable hazardous waste management requirements. All other concentrated wastes may continue to be managed as non-hazardous under this exclusion subject to Condition (6). For purposes of this condition, DOE-RL must follow the same verification requirements in condition (2)(b)(iii) for initial verification. Hexavalent chromium is included as part of the subsequent verification only if initial verification testing indicates a hexavalent chromium concentration greater than 10 percent of the hexavalent chromium delisting value. When concentrated waste is managed as a dry powder, DOE-RL must annually verify or update the concentration factor used to relate evaporator brine and powder concentration. (3) Re-opener Language (a) If, anytime before, during, or after treatment of waste in the 200 Area ETF, DOE-RL possesses or is otherwise made aware of any data (including but not limited to site conditions that differ from those presented in the November 2001 rulemaking petition) indicating concentrated wastes managed under terms of this exclusion no longer meets delisting criteria, including groundwater monitoring data from any unit that receives concentrated waste subject to this exclusion, DOE-RL must report such data, in writing, to the Regional Administrator within 10 days of first possessing or being made aware of that data. DOE-RL shall also report new or different information related to a condition at the 200 Area ETF or disposal units receiving concentrated waste if the information is relevant to this exclusion. (b) Based on the information described in paragraph (3)(a) or any other relevant information received from any source, the Regional Administrator will make a preliminary determination as to whether the reported information requires Agency action to protect human health or the environment. Further action may include suspending, or revoking the exclusion, or other appropriate response necessary to protect human health

and the environment.
(c) If the Regional Administrator determines that the reported information does require Agency action, the Regional Administrator will notify DOE-RL in writing of the actions the Regional Administrator believes are necessary to protect human health and the environment. The notice shall include a statement of the proposed action and a statement providing DOE-RL with an opportunity to present information as to why the proposed Agency action is not necessary or to suggest an alternative action. DOE-RL shall have 30 days from the date of the Regional Administrator's notice to present the information. EPA may require DOE-RL to take immediate action prior to the 30-day response period upon a finding by EPA that conditions may pose an imminent and substantial endangerment of human health and the environment that requires an immediate response action.
(d) If after 30 days from EPA's written notification in paragraph above, DOE-RL presents no further information, the Regional Administrator will issue a final written determination describing the Agency actions that are necessary to protect human health or the environment. Any required action described in the Regional Administrator's determination shall become effective immediately, unless the Regional Administrator provides otherwise.

(4) Delisting Levels: All total constituent concentrations in concentrated waste managed under this exclusion must be equal to or less than the following levels, expressed as mg/L:

Constituent	**Phase I sampling limit (mg/L evaporator brine)**	**Phase II sampling limit, powder**
Inorganic Constituents		
Barium	6.7×10^{2}	3.4×10^{1} mg/L TCLP
Beryllium	7.2×10^{1}	3.6 mg/L TCLP
Nickel	2.6×10^{2}	1.3×10^{1} mg/L TCLP
Silver	3.5×10^{1}	1.8 mg/L TCLP
Vanadium	1.9×10^{2}	9.7 mg/L TCLP
Zinc	2.6×10^{3}	1.3×10^{2} mg/L TCLP
Arsenic	8.9×10^{-1}	4.3×10^{-2} mg/L TCLP
Cadmium	5.2	2.6×10^{-1} mg// TCLP
Chromium (Cr+3)	1.0×10^{5}	5.0×10^{3} mg/L TCLP
Chromium (Cr+6)	1.6×10^{1}	8.0×10^{-1} mg/L TCLP
Lead	1.0×10^{2}	5.0 mg/L TCLP
Mercury	7.5×10^{-1}	3.8×10^{-2} mg/L TCLP
Selenium	2.0×10^{1}	1.0 mg/L TCLP
Cyanides	1.2×10^{2}	6.2 mg/L TCLP
Organic Constituents		
O-Cresol	3.3×10^{2}	1.6×10^{1} mg/L TCLP
2,4,6 Trichlorophenol	4.0×10^{1}	2.0 mg/L TCLP
Benzene	1.0×10^{1}	5.0×10^{-1} mg/L TCLP

		Chrysene	1.3×10^{1}	6.4×10^{-1} mg/L TCLP
		1,4-dichlorobenzene	5.1×10^{1}	2.5 mg/L TCLP
		Hexachlorocyclopentadiene	3.1×10^{2}	3.1×10^{2} mg/kg total
		[Bis(2-Chloroisopropyl) ether]	1.7×10^{1}	8.7×10^{-1} mg/L TCLP
		Bis(2-ethylhexyl)phthalate	1.1×10^{1}	5.3×10^{-1} mg/L TCLP
		Isophorone	1.3×10^{3}	6.4×10^{1} mg/L TCLP
		Diphenylamine	1.1×10^{2}	5.4 mg/L TCLP
		p-Chloroaniline	2.6×10^{1}	1.3 mg/L TCLP
		Acetonitrile	1.7×10^{2}	1.7×10^{2} mg/kg total
		2,6-Dinitrotoluene	1.9	9.4×10^{-2} mg/L TCLP
		N-Nitrosodiphenylamine	2.5×10^{2}	1.2×10^{1} mg/L TCLP
		Pyridine	6.6	3.3×10^{-1} mg/L TCLP
		Lindane [gamma-BHC]	8.0	4.0×10^{-1} mg/kg total
		Arochlor [total of Arochlors 1016, 1221, 1232, 1242, 1248, 1254, 1260]	2.0×10^{-1}	2.00×10^{-1}mg/kg total
		4-chlorophenyl-phenyl ether	9.8	4.9×10^{-1} mg/L TCLP
		Carbon tetrachloride	1.0×10^{1}	5.0×10^{-1} mg/L TCLP
		4-chlorophenyl-phenyl ether	9.8	4.9×10^{-1} mg/L TCLP
		Acetone	6.6×10^{2}	3.3×10^{1} mg/L TCLP
		Carbon disulfide	3.7×10^{2}	3.7×10^{2} mg/kg total

(5) Recordkeeping and Data Submittals.
(a) DOE-RL shall maintain records of all waste characterization, waste processing strategies, and mass balance calculations required by Condition (1)(a), concentration factors required by Condition (2)(a)(ii) and verification sampling data, including QA/QC results, in the facility operating record for a period of no less than three (3) years. However, this period is automatically extended during the course of any unresolved enforcement action regarding the 200 Area ETF or as requested by EPA.
(b) No later than February 28th of the first year after the effective date of this exclusion and annually thereafter, DOE RL must provide to the Regional Administrator and to the Washington State Department of Ecology a summary report of concentrated waste(s) managed under this exclusion. This report shall identify the concentrated waste(s) managed under this exclusion, the associated influent waste(s), and the results of all verification sampling.
(c) Records required by Condition (5)(a) must be furnished on request by EPA or the State of Washington and made available for inspection. All data must be accompanied by a signed copy of the following certification statement to attest to the truth and accuracy of the data submitted:
"Under civil and criminal penalty of law for the making or submission of false or fraudulent statements or representations (pursuant to he applicable provisions of the Federal Code, which include. but may not be limited to, 18 USC 1001 and 42 USC 6928). I certify that the information contained in or accompanying this document is true, accurate, and complete.

As to the (those) identified section(s) of the document for which I cannot personally verify its (Their) truth and accuracy, I certify as the official having supervisory responsibility of the persons who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.

In the event that any of this information is determined by EPA in its sole discretion to be false, inaccurate, or incomplete, and upon conveyance of this fact to DOE-RL, I recognize and agree

		that this exclusion of waste will be void as if it never had effect or to the extent directed by EPA and that the DOE-RL will be liable for any actions taken in contravention of its RCRA and CERCLA obligations premised upon DOE-RL's reliance on the void exclusion." (6) Concentrated Waste Disposal Requirements. Concentrated wastes managed under this exclusion must be land disposed of on-site in a unit permitted by the Washington State Department of Ecology pursuant to the state's authorized dangerous waste program, a unit authorized by EPA pursuant to Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) authority, or in a unit managed under Atomic Energy Act (AEA) authority pursuant to applicable DOE orders.

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