APPENDIX A
FRAMEWORK FOR DELISTING PETITIONS

EPA DELISTING PETITION FRAMEWORK

PART 1: DELISTING ADMINISTRATIVE INFORMATION

1. Name of Petitioner.

   a. Name of individual or firm sending petition:

   _____

   b. Mailing address of individual or firm:

   Street/P.O. Box: _____

   City: _____

   State: _____ Zip Code: _____

   Telephone No.

   Fax No._____

2. People to Contact for Additional Information Pertaining to this Petition.

   a. Name Title Telephone No.

   _____ _____ ( )_____
   _____ _____ ( )_____

   _____ _____ ( )_____

   b. Mailing address of contact(s) if different from petitioner.

   Street/P.O. Box: _____

   City: _____

   State: _____ Zip Code: _____

3. Facility Responsible for Generating Petitioned Waste.

a. Name of facility: _____

b. Location of facility:

Street: _____

City: _____

State: _____ Zip Code: _____

c. RCRA ID number: _____

4. Location of Petitioned Waste.

Same as facility name and address given in item 3;

or

a. Name of facility: _____

b. Location of facility:

Street: _____

City: _____
State: _____ Zip Code: _____

c. RCRA ID number: _____

5. Describe the proposed delisting action.

6. Provide a statement of the need and justification for the proposed action.

7. Signed Certification Statement.

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 getting the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for sending false information, including the possibility of fine and imprisonment.

Signed by Authorized Representative*,

_____

Typed Name: _____

Title: _____

*Note: An "authorized representative" is a person responsible for the overall operation of a facility or an operational unit (i.e., part of a facility), for example, a plant manager, superintendent, or person of equivalent responsibility. Consultants or other outside parties should not sign the certification statement.

PART 2: DELISTING WASTE AND WASTE MANAGEMENT INFORMATION

BASIS FOR THE WASTE LISTING

1. Which of the following scenarios best describes the petitioned waste? (Choose the most appropriate scenario and provide the information requested for the chosen scenario.)

   a. Petitioned waste is <u>not</u> a mixture of two or more listed hazardous wastes.

      Common name of petitioned waste: _____

      EPA Hazardous Waste Number: _____

      Hazardous waste description: _____

   b. Petitioned waste is a mixture of two or more listed hazardous wastes.

      Common name of mixture: _____

      For all listed wastes provide:

         EPA Hazardous Waste Number: _____

         Hazardous waste description: _____

         Common name: _____

   c. Petitioned waste is a mixture of one or more solid non-hazardous wastes and one or more listed hazardous wastes, as described in 40 CFR §261.3(a)(2)(iii-iv).

      Common name of mixture: _____

      Solid waste(s) common name(s): _____

For all listed wastes provide:

EPA Hazardous Waste Number: _____

Hazardous waste description: _____

Common name: _____

d. Petitioned waste is generated from the treatment, storage, or disposal of one or more listed hazardous wastes (or solid non-hazardous and listed hazardous waste mixture), as described in 40 CFR §261.3(c)(2)(i).

Description of petitioned waste: _____

Common name of petitioned waste: _____

Solid waste(s) common name(s): _____

For all listed wastes provide:

EPA Hazardous Waste Number: _____

Hazardous waste description: _____

Common name: _____

2. Describe the physical form of the petitioned waste (e.g., solid, liquid).

3. If the physical form is sludge or liquid, estimate based on waste analysis the percentage of solids (e.g., provide a range).

HISTORY OF WASTE GENERATION

4. Which of the following describes the generation of the

petitioned waste: (Indicate those that apply and provide the information requested for each item.)

a. Waste has been generated in the past.

Provide the year when waste was first generated: _____

Provide the year when waste generation ended (if applicable): _____

b. Waste is presently being generated.

Provide the year when waste was first generated: _____

c. Waste will be generated in the future.

VOLUME OF PETITIONED WASTE

5. Is the petition for a waste of fixed quantity (e.g., a discrete volume of waste contained in a unit)?

Yes **[Answer item 5a]**
No **[Answer item 5b]**

a. Petitioned waste is/will be a fixed quantity.

Estimated volume: _____ _____
Quantity Unit of measurement

Describe the method of volume estimation.

b. Petitioned waste is/will be generated on a routine or continuous basis.

	Average Quantity	Maximum Quantity	Unit of Measurement
Monthly Volume	_____	_____	_____
Annual Volume	_____	_____	_____

Describe the method of volume estimation.

HISTORY OF WASTE MANAGEMENT

6. As appropriate, describe the present, past, and proposed waste management methods for the petitioned waste.

a. Present waste management methods, and off-site facility or facilities used (name, address, and waste management method).

b. Past waste management methods, if different from present, and off-site facility or facilities used (name, address, and waste management method).

c. Proposed waste management methods if delisting petition is granted, and off-site facility or facilities to be used (name, address, and waste management method).

PART 3: DELISTING PROCESS INFORMATION

GENERAL OPERATIONS AT THE GENERATING FACILITY

1. Describe facility business area(s) and operations. Include SIC code(s).

   SIC .)2)2)2)-: _____

   _____

   SIC .)2)2)2)-: _____

   _____

2. List and describe products manufactured at the facility.

3. List and describe all wastes (including all hazardous wastes) generated at the facility.

4. Describe your manufacturing and waste treatment areas and waste management units. Attach schematics showing the layout of the facility.

5. Describe the regulatory status of all on-site waste treatment, storage, and disposal units. Include a list of all hazardous waste permits and other permits issued under Federal and State environmental statutes. Include the permit numbers in this list.

CONTRIBUTING MANUFACTURING PROCESSES

6. Describe and include schematics of all "pre-process" steps used to prepare materials for processing before primary manufacturing operations, including surface and equipment preparation operations. Identify all pre-process material inputs and outputs in your descriptions and schematics.

7. Provide a step-by-step description and schematic of each manufacturing process contributing to the petitioned waste.

Include each process step, reactions occurring, flow rates, and material inputs and outputs, as well as reaction intermediates and byproducts. Identify and describe waste inputs and outputs on the schematic(s) and show how each waste is managed.

8. Describe, and identify on the schematic, exactly where the petitioned waste is generated (if generated by a manufacturing process).

9. List and describe all process equipment, including the function of each unit and the ranges of the operating parameters.

10. Describe all of your operating cycles (batch cycles, versus continuous operation, start-up, shut-down, maintenance, cleaning) on a daily, weekly, or other period basis, as appropriate. Identify periods when process wastes are not generated (e.g., plant shutdowns or routine equipment maintenance).

11. Assess the extent that all contributing manufacturing processes, operations, process materials, or generated wastes have varied in the past or may vary in the future.

12. Describe how the composition and generation rate of the petitioned waste may periodically vary due to any aspect of manufacturing process variability.

13. Does a waste treatment process contribute to the petitioned waste?

Yes **[Continue with item 14]**
No **[Skip to item 22]**

CONTRIBUTING WASTE TREATMENT PROCESSES

14. Provide a step-by-step description and schematic of each

waste treatment process contributing to the petitioned waste. Include process steps, reactions occurring, flow rates, material inputs, and waste inputs and outputs.

15. Describe, and identify on the schematic, exactly where the petitioned waste is generated (if applicable).

16. Identify and describe waste inputs and outputs on the schematic(s) and show how each waste is managed.

17. Describe all non-process wastes entering the waste treatment processes, including composition, rate of inputs, and source.

18. List and describe all process equipment, including the function of each unit and the ranges of the operating parameters.

19. Describe all of your operating cycles (batch cycles versus continuous operation, start-up, shut-down, maintenance, cleaning) on a daily, weekly, or other period basis, as appropriate. Identify periods when treatment wastes are not generated (e.g., plant shutdowns or routine equipment maintenance).

20. Assess the extent that all contributing treatment processes, operations, process materials, or generated wastes have varied in the past or may vary in the future.

21. Describe how the composition and generation rate of the petitioned waste may periodically vary due to any aspect of treatment process variability.

22. Has the petitioned waste been managed in a land-based unit?

Yes **[Continue with item 23]**

No **[Skip to item 25]**

WASTE MANAGEMENT OPERATIONS

23. Provide the following information (items 23a through 23g) for each unit that is (or was) used to manage the petitioned waste:

(If the petitioned waste is managed in more than one unit, assign a number to each unit (e.g., Unit #1, Unit #2, etc.) and use the unit numbers to associate a description with a specific unit.)

a. Unit location/address (show if on- or off-site).

b. Description of unit construction (current design and materials).

c. History of unit design (e.g., chronological summary of any changes to original construction).

d. Purpose and description of any unit design and operating changes.

e. Estimated surface area.

f. Estimated unit capacity volume.

g. Listing of waste and material inputs which have occurred throughout the life of the unit, if known.

24. Provide detailed schematic(s) of the waste unit(s) showing (as appropriate) unit dimensions, influent point(s), effluent point(s), and waste thickness.

PROCESS MATERIALS

25. List all materials used in the operations that contribute

to the petitioned waste. The list should include:

a. The name of the material(s).

b. The process/operation in which it is used (i.e., manufacturing process, treatment process, waste management operations).

c. Function of each material in the process.

d. Approximate annual quantities used.

26. Provide Material Safety Data Sheets (MSDS) and any other compositional information for trade name and non-elemental materials. Include raw materials, cleaners, oils, solvents, strippers and any by-products generated by the process

27. Specify the source, quality (i.e., recycled or virgin), and quantity of oil, grease, and hydraulic fluids entering the processes.

SPECIAL INFORMATION

28. Are you requesting an upfront exclusion for a waste that is not currently generated but will be in the future?

Yes **[Continue with item 29]**

No **[Skip to item 32]**

29. Explain how the bench-scale or pilot-scale process demonstration adequately models the proposed full-scale process.

30. Explain any real or potential differences between the two processes.

31. Describe the impact of those differences on the character

of the petitioned waste.

32. Are you requesting an exclusion for a waste generated by a multiple waste treatment facility (MWTF)?

Yes **[Continue with item 33]**

No **[Skip to Part 4]**

33. Describe your procedure for prescreening clients and wastes and how this procedure will be carried outed should your waste be excluded.

34. Describe the procedures by which you will make sure that: (1) treatment levels needed by an exclusion are maintained and (2) a hazardous waste is not disposed improperly as non-hazardous.

PART 4: DELISTING ANALYTICAL PLAN DEVELOPMENT

1. Provide a complete list of the constituents and parameters of concern identified for your petitioned waste based on appropriate waste constituent analyses and the results of an engineering analysis. Identify those constituents quantitated by laboratory analysis and those quantitated using mass balance demonstrations.

2. Provide mass balance demonstrations for those constituents of concern in your list for which analyses were not conducted. Provide all calculations and assumptions.

3. Explain why any other delisting constituent of concern is not on the constituent of concern list for your petitioned waste.

4. Explain why your petitioned waste does not exhibit any hazardous waste characteristic for which analysis was not conducted.

PART 5: DELISTING SAMPLE AND ANALYSIS INFORMATION

1. Has a draft sampling and analysis plan been submitted to EPA for review before petition preparation?

   Yes **[Answer items 1a and 1b]**
   No **[Skip to item 2]**

   a. Submittal date of sampling and analysis plan __/__/__

   b. Log number assigned by EPA to your draft submittal _____

WASTE SAMPLING INFORMATION

2. Were all sampling-related activities performed by in-house staff?

   No **[Answer items 2a and 2b]**
   Yes **[Answer item 2b]**

   a. Name and address of the organization(s) or company(s) responsible for designing the sampling strategy and collecting the samples.

   Name _____
   Street _____

   City _____ State _____ Zip _____
   Telephone (___)_____

   b. For each individual person (in-house and otherwise) who designed the sampling plan, the quality control plan, and/or participated in sample collection, please provide a resume of qualifications and the following information:

   Name _____

   Affiliation _____

   Title _____

SAMPLING STRATEGY

3. Provide the following information (items 3a through 3f) on the sampling strategy you followed to make sure that the samples were representative.

   a. Identify which process point discharges, containment areas (e.g., lagoons), or other areas (e.g., soil) were sampled and why these areas were selected for sample collection.

   b. Describe the techniques and guidelines used to select waste sampling points (e.g., random sampling procedure or fixed transect and offset sampling procedure).

   c. Describe the sampling and subsampling (i.e., transferring of sample aliquots into containers specific to certain analyses) procedures used during the sample collection process, including the particular days and times selected for sample collection, the number of grab samples collected for each composite sample, and why these procedures were used.

   d. Describe the sampling devices used for sample collection and the basis for selecting the devices.

   e. Identify and discuss any deviations from your original sampling plan and strategy and the impact of these deviations on waste characterization.

   f. Explain why you believe the samples collected are non-biased and sufficiently represent the petitioned waste. In this explanation, fully address the potential for waste uniformity or spatial and temporal variability and how the strategy ensured collection of representative samples.

SAMPLE SPECIFIC INFORMATION

4. How many samples of the petitioned waste were collected?

   Is the number of samples taken different from the number of samples agreed upon during the pre-petition scoping meeting?
   Explain the deviation.

5. For each individual sample collected, please provide the following sample-specific information (items 5a through 5g).

   a. For each sample included in item 4, provide the sample identification number (as it appears in your field logbook and other records), the date that the sample was taken, an indication as to what type of sample it is (waste sample versus quality control sample and whether or not it is a composite sample).

   b. Describe how each sample was collected, and its point of collection from the petitioned waste. If a sample is a composite of grabs, provide the number of grab samples collected for the composite sample, the sampling location for each grab sample, the volume of each grab sample, and the volume of the composite sample.

   c. Describe the general sampling location (e.g., which quadrant of a surface impoundment) and the specific sampling points (e.g., specific location in the quadrant). You may refer to numbered sampling points shown in a diagram.

   d. Describe how each sample was composited (e.g., equipment used and manner of mixing).

   e. Provide a physical description of each sample at time of collection (e.g., color, odor, whether phase separation occurred soon after collection).

   f. For each composite sample, specify the time and date when the grab samples were collected and the time and date when the sample was composited, as applicable.

   g. Describe the handling and preparation techniques used for each sample (including types of containers used and techniques employed for container preparation) and types and amounts of preservatives used.

OTHER GENERAL INFORMATION

6. Describe the weather conditions during sampling (if conducted outdoors).

7. Describe any facility activities separate from sampling

that occurred at the same time and might have affected sample representativeness.

8. Describe sampling device decontamination; and note when disposable devices were used for sample collection.

Sample Identification Number	Date Sample Was Taken	Type of Sample [Mark one box only] Waste Sample	Quality Control Sample	Composite Sample Yes	Composite Sample No
		G	G	G	G
		G	G	G	G
		G	G	G	G
		G	G	G	G
		G	G	G	G
		G	G	G	G
		G	G	G	G
		G	G	G	G
		G	G	G	G
		G	G	G	G
		G	G	G	G
		G	G	G	G

9. Were the chain-of-custody procedures specified in SW-846 followed?

Yes **[Skip to item 11]**
No **[Continue with item 10]**

10. Provide a description of the quality control procedures and documentation system used to track sample location and maintain sample integrity during transportation to the laboratory. Copies of the chain-of-custody forms may be provided, but are not needed.

LOCALIZED AREA OF CONTAMINATION

11. Have you collected samples to characterize a localized area of contamination (a "hot spot") within the petitioned waste?

Yes **[Continue with item 12]**
No **[Skip to item 16]**

12. Discuss your basis for believing a hot spot may or does exist (e.g., records of a one-time discharge of a concentrated material at a specific location).

13. Describe the known or predicted location (on a diagram) and the dimensions (e.g., depth, width and length) of the hot spot.

14. Identify the samples specifically collected to characterize the hot spot.

15. Explain why the samples sufficiently represent the hot spot.

MULTIPLE WASTE TREATMENT FACILITY

16. Have you collected samples to characterize a waste generated by a multiple waste treatment facility (MWTF)?

Yes **[Continue with item 17]**
No **[Skip to item 21]**

17. List and describe the untreated wastes that were treated and are represented by the treatment residue samples collected during the sampling period.

18. Provide the percentage of total wastes treated annually that was represented by the sampling period.

19. List and briefly describe the untreated wastes that also are treated at the facility but were not represented by the sampling period.

20. Explain why the wastes not represented by the sampling

period are not expected to contain any other hazardous constituents of concern, different levels of constituents of concern, or other different characteristics than that represented by the sampling period.

WASTE ANALYSIS INFORMATION

21. Was sample analyses done by in-house staff?

No **[Answer items 21a and 21b]**
Yes **[Answer item 21b]**

a. Name and address of the organization(s) or company(s) responsible for sample analyses.

Name _____
Street _____

City _____State_____Zip Code_____

Telephone ( )_____

b. For each individual person (in-house and otherwise) who conducted analyses or was responsible for data reduction, validation, and laboratory quality control, please provide a resume of qualifications and the following information:

Name _____

Affiliation _____

Title _____

22. Provide your signed laboratory data reporting forms from all analyses, including results from quality control analyses.

23. Provide the following information on each sample and each analysis.

a. Sample identification numbers as logged during collection and as assigned by the laboratory.

b. Type of sample (e.g., waste sample, waste sample

replicate, equipment blank, field blank).

c. Date of sample receipt by the laboratory.

d. The sample workup or preparation method and reference for the method (e.g., SW-846 Method 3500).

e. The date of sample workup or preparation.

f. The name of the person conducting the analysis.

g. The date of extraction and analysis.

h. The test method used and the source of the test method (e.g., SW-846 Method 8020).

i. The specific constituent, parameter, or hazard for which analysis was conducted.

j. The test results, expressed in appropriate units (e.g., mg/L, mg/kg).

k. The basis for the analysis (e.g., wet/dry weight).

l. The quantitation limits.

24. Provide the names and model numbers of all equipment used during analysis.

25. Provide all other information necessary to fully interpret the test procedures or results.

26. For each quality control analysis that involved a matrix or a surrogate spike and spike duplicate analysis, provide the following information.

a. The name of the spike analyte added.

b. The concentration of the spike analyte in the unspiked

sample.

c. The amount of the spike analyte added.

d. The measured amount of the spike in both spiked samples.

e. The calculated percent recovery of the spike and method of calculation.

f. The acceptance criterion for recovery of each matrix spike.

g. The relative percent difference (RPD) between the duplicate results.

h. The acceptance criterion for the RPD.

27. Identify whether the waste analytical data was corrected based on quality control results (e.g., blank analysis) and explain how the correction was made.

28. Explain any inconsistencies or deviations found in the reported analytical results. The discussion should include any observed analytical interferences and what actions were taken to resolve the problems.

29. If any calculations are necessary, (i.e., in use of the Oily Waste Extraction Procedure, for the Mobile Metal Concentration) please include all calculation sheets

PART 6: DELISTING GROUNDWATER MONITORING INFORMATION

1. Show which of the following describes the management of the petitioned waste.

   a. The petitioned waste is currently managed in a land-based waste management unit (on-site or off-site), and ground-water monitoring is needed under 40 CFR Part 264 or 265 or authorized State equivalent, or other Federal, state, or local requirements; or if ground-water monitoring information is otherwise available for the unit.
   [Go to item 2]

   b. The petitioned waste was once managed (but is no longer) in a land-based waste management unit (on-site or off-site) and ground-water monitoring was needed under 40 CFR Part 264 or 265 or authorized State equivalent, or other Federal, state, or local requirements; or if ground-water monitoring information is otherwise available for the unit.
   [Go to item 2]

   c. The petitioned waste is currently managed, or was once managed, in a land-based waste management unit, but ground-water monitoring requirement has been waived.
   [Go to item 9]

   d. The petitioned waste is currently managed, or was once managed, in one or more land-based waste management units containing also significant amounts of other wastes, and you consider ground-water data from these non-dedicated units are immaterial in evaluating the petitioned waste's impact on ground-water quality.
   [Go to item 10]

   e. None of the above management scenarios apply.
   [Go to item 11]

2. Has the appropriate responsible party previously submitted ground-water monitoring information for the subject units to an EPA Regional office or an authorized State in response to 40 CFR Part 264 or 265 requirements (or authorized State equivalent)?

   Yes **[Continue with item 3]**

No **[Skip to item 5]**

3. Do you wish that we directly get the ground-water monitoring information from the EPA Region or State?

   Yes **[Complete item 4 and continue with item 6]**
   No **[Skip to item 5]**

4. Indicate the EPA Regional or State contact for getting the ground-water monitoring information (include name of contact, affiliation, mailing address, and phone number).

   a. Name of contact: _____

   b. Affiliation: _____
   c. Title of report (if applicable): _____
   d. Street/P.O. Box: _____

   City: _____
   State: _____Zip Code:_____

   e. Phone: (____)_____

5. Provide all available and relevant (e.g., for each unit used to manage the petitioned waste) ground-water monitoring information and reports which, at a minimum, should include:

   a. A description of site geology and hydrology.

   b. A description of the ground-water monitoring systems for the units in which the petitioned waste is (or was) managed.

   c. The results obtained from the analysis of ground-water samples.

   d. A discussion of sampling and analytical procedures followed in getting and analyzing the ground-water samples.

   e. Any additional information necessary to characterize the petitioned waste's impact on ground-water quality.

f. An analysis and discussion of whether the above-listed information and data that show contamination of the ground-water is attributable to the petitioned waste.

6. Is the unsaturated (vadose) zone monitored at any of the subject units?

Yes **[Continue with item 7]**
No **[Skip to item 8]**

7. Provide the following information on vadose zone monitoring (e.g., lysimeter information) in as much detail as possible (as requested for ground-water monitoring systems).

a. A description of regional, local, and unit-specific geology and hydrology, and soil characteristics.

b. A description of the monitoring system(s) (e.g., design and construction).

c. A description of the sampling and analytical procedures followed.

d. Analytical and QC data obtained from sample analysis.

e. An interpretation of the information and data presented.

8. Discuss whether ground-water contamination exists on the site and, if it does, identify the source. If the source is not the petitioned waste, explain, with supporting information, why the petitioned waste has not contributed to the contamination.

9. Provide documentation on the waiver or exemption of ground-water monitoring at the land-based waste management unit containing the petitioned waste.

10. Identify the units in question, provide estimates of the relative volumes of the petitioned and other wastes disposed in the units, and discuss in detail why you consider ground-water data from these non-dedicated units are immaterial in evaluating the petitioned waste's impact on ground-water quality.

11. Describe why ground-water monitoring is not needed for your petitioned waste.

APPENDIX B
CHECKLIST OF REQUESTED PETITION INFORMATION

CHECKLIST OF REQUESTED PETITION INFORMATION

Administrative Information

__ Name and mailing address of petitioner

__ Facility contact names, titles, addresses, and telephone numbers

__ Name and location address of the facility

__ RCRA identification number of the facility

__ Description of proposed action

__ Statement of interest in proposed action

__ Statement of need and justification for proposed action

__ Signed certification statement

__ Copy of affidavit of publication of notice regarding submittal of petition.

Waste and Waste Management History Information

__ EPA Hazardous Waste Number(s) and appropriate hazardous waste description(s) for the petitioned waste

__ Indication as to whether the petitioned waste is listed based on 40 CFR §261.3(a)(2)(iii-iv) or (c)(2)(i).

__ Description of any non-hazardous solid waste components of the petitioned waste

__ Physical form of the waste

__ History of waste generation

__ Estimated fixed volume of waste, if applicable

__ Estimated waste generation rates, if applicable (average volumes generated monthly and annually; maximum volumes generated monthly and annually)

____ Method used to estimate waste volume(s)

____ Past, current, and planned (if delisted) waste management practices

____ Names and locations of all off-site facilities that have been used or will be used to manage the petitioned waste

Process and Waste Management Information

____ Overview of the generating facility's manufacturing operations and business area

____ Descriptions and schematics of all contributing manufacturing processes

__ Descriptions and schematics of all contributing treatment processes

__ Descriptions of operating cycles for all contributing processes

__ Assessment of extent of past and future process variability and discussion of potential for waste variability

__ Descriptions of waste management practices, including schematics of all units

__ List of all materials used in contributing processes

__ Material Safety Data Sheets for all non-elemental and trade name materials used in contributing processes

__ Sources of oil and grease in contributing processes

Constituents of Concern Information

__ List of all hazardous constituents of concern for the petitioned waste

__ Detailed discussion explaining why any other delisting constituent of concern is not included on the list

__ List of constituents of concern selected for analyses

__ Mass balance demonstrations for constituents of concern not selected for analyses

Waste Sampling Information

__ Name and address of organization conducting sampling

__ Names and qualifications of personnel conducting sampling

__ Description and schematic of sampling points

__ Number of samples (grab and composite)

__ Sample identification numbers

__ Description of sampling methods (including compositing)

__ Physical description of samples

__ Sampling frequency, including dates and times

__ Description of sampling equipment and containers

__ Description of sample handling and preservation methods

__ Description of quality control and documentation system

__ Statement that the samples are representative and a discussion explaining why the samples are considered representative

Waste Analysis Information

__ Name and address of organization conducting analyses

__ Names and qualifications of personnel conducting analyses

__ Dates of sample receipt at laboratory

__ Laboratory sample identification numbers

__ Laboratory sample preservation and handling methods

__ Sample workup and preparation dates and methods

__ Sample extraction and analysis dates

__ Names and model numbers of analytical equipment

__ List and source of analytical methods

__ Quantitation Limits

__ Total oil and grease analysis results

__ Hazardous waste characteristics analysis results or, if appropriate, a discussion explaining why characteristics are not exhibited

__ Total sulfide and total cyanide analysis results

__ Reactive sulfide and reactive cyanide analysis results, if necessary based on the respective total analysis results

__ Toxicity Characteristic Leaching Procedure (TCLP) analysis results for the TC metals, nickel, cyanide and any remaining inorganic of concern

__ Total constituent analysis results for the TC metals and nickel

__ Total constituent and TCLP analyses results for the TC organic constituents

__ Total constituent and TCLP analyses results for all other inorganic and organic constituents of concern

__ Multiple pH test analytical results.

__ Field quality control analysis results

__ Method blank analysis results

__ Matrix spike and matrix spike duplicate analyses results

__ Surrogate spike analysis results

__ Discussion regarding any analytical inconsistencies or deviations

Ground-water Monitoring Information

__ Descriptions of regional, local, and unit-specific geology and hydrology

__ Description of the ground-water monitoring system

__ Well logs and well construction diagrams

__ Map of monitoring well locations

__ Description of well development procedures

__ Analytical results from a minimum of four rounds of ground-water monitoring

__ Discussion of ground-water sampling and analysis protocols

__ Any additional information needed to fully characterize the impact of the petitioned waste on ground-water quality

__ Interpretation of the ground-water analytical data based on understanding of site hydrogeology and hydrogeochemistry and any seasonal variations.

APPENDIX C
USE OF RANDOM NUMBER TABLE

HOW TO USE A RANDOM NUMBER TABLE

A random number table (shown in this appendix as "Table 1") may be used to select sampling points without bias by the sampler. (The procedure generally involves selecting a set of **n** elements (e.g., grid intersection points) from a population totaling **N** elements. The steps listed below form a single-stage method for making the selection.

1. Label your population by numbering its elements. Each label should have the same number of digits; for example, if **N** = 308, the labels should be written down as 001, 002, 003 ... through 308.

2. Decide upon a rule for selecting numbers from the random number table. You might select the **n** numbers (selected set of total **N** elements) by starting sequentially in a given column, or in a given column, or in a given row, or by skipping through the table in some orderly fashion.

3. Using the rule you have selected, choose your first number from the random number table. The number may have more digits than you need; in that case, simple disregard the excess digits on the end of the number.

4. If the number you have chosen is greater than **N** (e.g., greater than 308), go to the next number. Repeat the procedure until you have a set of **n** numbers, all within the range of 1 to **N**.

If you suspect that the table is itself biased in some way, you can introduce an additional element of randomness by throwing dice to decide which entries in the table you will use.

If you exhaust the table before **n** random numbers have been selected, you could start over from some new point in the table. However, if you need that many sampling numbers, you may find it more convenient to use the random number generators provided in many computer statistical software packages.

Example: We have 287 drums of waste. We wish to choose 34 of them randomly and collect one sample for analysis from each.

14. We assign numbers to the drums 001, 002, 003, ...through 287.

15. We decide to choose 3-digit numbers sequentially, starting from the top of the farthest left column of the random number table.

16. The first number is 201. The second number is 744, but we cannot use it because it is greater than 287. The next useable number is 221. The 34 numbers and their location in the table are shown below.

201 7 74 49 94 70 **221** 5 93 29	42 28 **044** 9 49 31 78 15 **121** 8	**231** 7 **030** 4 38 67 69 84 **273** 0	59 66 10 33 23 42 32 52 30 55	38 61 53 70 29 65 32 54 91 87	02 10 11 54 40 88 15 12 50 57	86 10 48 63 78 71 54 02 58 51	51 55 94 60 37 18 01 37 49 36	92 52 94 49 48 64 38 37 12 53	44 25 57 38 06 57 12 93 96 40
45 04 44 91 **162** 3 **045** 0 32 70	77 97 99 49 91 02 65 04 **177** 2	36 14 89 39 **199** 6 65 65 **036** 1	99 45 94 60 47 59 82 42 66 26	52 95 48 49 89 65 70 51 24 71	69 85 06 77 27 84 55 04 22 77	03 83 64 72 30 92 61 47 88 33	51 87 59 26 63 37 88 83 17 78	85 56 08 51 26 24 99 34 08 92	22 37 25 57 23 66 82 37 73 49
036 4 62 49 61 00 89 03 01 72	59 07 **009** 0 95 86 90 49 33 85	42 95 67 86 98 36 **287** 4 52 40	81 39 93 48 14 03 21 04 60 07	06 41 31 83 48 88 09 96 06 71	20 81 19 07 31 07 60 45 80 37	92 34 67 68 33 40 22 03 14 29	51 90 49 03 06 86 52 80 55 24	39 08 27 47 33 76 01 79 85 79	21 42 52 03 68 57 33 81 31 96
275 6 49 05 49 74 **202** 6 48 87	49 79 74 48 37 25 **224** 3 77 96	34 34 **105** 5 97 26 88 08 43 39	32 22 35 25 33 94 19 85 76 93	60 53 24 28 42 23 08 12 08 79	91 17 20 22 01 28 47 65 22 18	33 26 35 66 59 58 65 63 54 55	44 70 66 34 92 69 56 07 93 75	93 14 26 35 03 66 97 85 97 26	99 70 91 23 73 82 56 79 90 77
087 2 95 97 37 99 **057** 9 55 85	87 46 98 62 57 31 58 37 63 42	75 73 17 27 70 40 85 33 00 79	00 11 31 42 46 55 75 18 91 22	27 07 64 71 46 12 88 71 29 01	05 20 46 22 24 32 23 44 41 39	30 85 32 75 36 74 54 28 51 40	22 21 19 32 69 20 00 48 36 45	04 67 20 99 72 10 96 23 26 11	19 13 94 85 95 93 66 45 78 32
67 28 85 86 40 10 94 55 **116** 3	96 25 94 78 60 09 89 48 77 77	68 36 32 59 05 88 90 80 23 20	24 72 51 82 78 44 77 80 33 62	03 85 86 43 63 13 26 89 62 19	49 24 73 84 58 25 87 44 29 03	05 69 45 60 37 11 23 74 94 15	64 86 89 57 18 47 66 20 56 37	08 19 06 87 75 62 20 19 14 09	91 21 08 15 52 21 26 52 47 16
64 00 50 94 66 98 66 91 33 58	**260** 4 **132** 3 37 96 42 83 **121** 8	54 55 78 41 44 13 60 77 02 07	38 57 60 58 45 05 90 91 19 40	94 62 10 60 34 59 60 90 21 29	68 40 88 46 75 85 79 62 39 45	26 04 30 21 48 97 57 66 90 42	24 25 45 98 27 19 72 28 58 84	03 61 70 96 17 85 08 70 85 43	01 20 36 89 48 51 96 03 95 67
52 49 74 98 50 26 49 46 **196** 5	40 16 93 99 54 30 61 89 **134** 4	72 40 78 30 01 88 33 79 78 39	73 05 79 47 69 57 96 84 73 88	50 90 96 92 54 45 28 34 62 03	02 04 45 58 69 88 19 35 36 00	98 24 40 37 23 21 28 73 25 96	05 30 89 76 05 69 39 59 86 76	27 25 84 41 93 44 56 34 67 90	20 88 74 68 05 32 97 07 21 68
64 17 **184** 3 65 58 79 90 **072** 3	47 67 97 37 60 87 31 00 **001** 5	87 59 68 97 51 09 91 14 59 05	81 40 56 56 96 61 85 65 16 09	72 61 57 95 15 53 31 75 94 42	14 00 01 88 66 81 43 15 20 40	28 28 11 89 66 88 45 93 63 76	55 86 48 07 44 75 64 78 65 67	23 38 42 60 37 01 34 53 34 12	16 15 11 92 28 88 88 02 94 10
90 08 53 82 98 17 **089** 1 37 21	**142** 4 62 02 **261** 5 **124** 4 46 77	01 51 21 62 04 50 82 40 84 67	95 46 34 13 76 25 30 62 67 39	30 32 41 03 20 33 45 50 85 54	33 19 12 85 54 84 64 54 97 37	00 14 65 30 39 31 65 17 33 41	19 28 00 97 23 33 89 25 11 74	40 51 56 30 59 64 59 44 90 50	92 69 15 48 96 27 99 95 29 62

TABLE I
RANDOM SAMPLING NUMBERS

20 17	42 28	23 17	59 66	38 61	02 10	86 10	51 55	92 52	44 25
74 49	04 49	03 04	10 33	53 70	11 54	48 63	94 60	94 49	57 38
94 70	49 31	38 67	23 42	29 65	40 88	78 71	37 18	48 64	06 57
22 15	78 15	69 84	32 52	32 54	15 12	54 02	01 37	38 37	12 93
93 29	12 18	27 30	30 55	91 87	50 57	58 51	49 36	12 53	96 40
45 04	77 97	36 14	99 45	52 95	69 85	03 83	51 87	85 56	22 37
44 91	99 49	89 39	94 60	48 49	06 77	64 72	59 26	08 51	25 57
16 23	91 02	19 96	47 59	89 65	27 84	30 92	63 37	26 24	23 66
04 50	65 04	65 65	82 42	70 51	55 04	61 47	88 83	99 34	82 37
32 70	17 72	03 61	66 26	24 71	22 77	88 33	17 78	08 92	73 49
03 64	59 07	42 95	81 39	06 41	20 81	92 34	51 90	39 08	21 42
62 49	00 90	67 86	93 48	31 83	19 07	67 68	49 03	27 47	52 03
61 00	95 86	98 36	14 03	48 88	31 07	33 40	06 86	33 76	68 57
89 03	90 49	28 74	21 04	09 96	60 45	22 03	52 80	01 79	33 81
01 72	33 85	52 40	60 07	06 71	80 37	14 29	55 24	85 79	31 96
27 56	49 79	34 34	32 22	60 53	91 17	33 26	44 70	93 14	99 70
49 05	74 48	10 55	35 25	24 28	20 22	35 66	66 34	26 35	91 23
49 74	37 25	97 26	33 94	42 23	01 28	59 58	92 69	03 66	73 82
20 26	22 43	88 08	19 85	08 12	47 65	65 63	56 07	97 85	56 79
48 87	77 96	43 39	76 93	08 79	22 18	54 55	93 75	97 26	90 77
08 72	87 46	75 73	00 11	27 07	05 20	30 85	22 21	04 67	19 13
95 97	98 62	17 27	31 42	64 71	46 22	32 75	19 32	20 99	94 85
37 99	57 31	70 40	46 55	46 12	24 32	36 74	69 20	72 10	95 93
05 79	58 37	85 33	75 18	88 71	23 44	54 28	00 48	96 23	66 45
55 85	63 42	00 79	91 22	29 01	41 39	51 40	36 45	26 11	78 32
67 28	96 25	68 36	24 72	03 85	49 24	05 69	64 86	08 19	91 21
85 86	94 78	32 59	51 82	86 43	73 84	45 60	89 57	06 87	08 15
40 10	60 09	05 88	78 44	63 13	58 25	37 11	18 47	75 62	52 21
94 55	89 48	90 80	77 80	26 89	87 44	23 74	66 20	20 19	26 52
11 63	77 77	23 20	33 62	62 19	29 03	94 15	56 37	14 09	47 16
64 00	26 04	54 55	38 57	94 62	68 40	26 04	24 25	03 61	01 20
50 94	13 23	78 41	60 58	10 60	88 46	30 21	45 98	70 96	36 89
66 98	37 96	44 13	45 05	34 59	75 85	48 97	27 19	17 85	48 51
66 91	42 83	60 77	90 91	60 90	79 62	57 66	72 28	08 70	96 03
33 58	12 18	02 07	19 40	21 29	39 45	90 42	58 84	85 43	95 67
52 49	40 16	72 40	73 05	50 90	02 04	98 24	05 30	27 25	20 88
74 98	93 99	78 30	79 47	96 92	45 58	40 37	89 76	84 41	74 68
50 26	54 30	01 88	69 57	54 45	69 88	23 21	05 69	93 44	05 32
49 46	61 89	33 79	96 84	28 34	19 35	28 73	39 59	56 34	97 07
19 65	13 44	78 39	73 88	62 03	36 00	25 96	86 76	67 90	21 68
64 17	47 67	87 59	81 40	72 61	14 00	28 28	55 86	23 38	16 15
18 43	97 37	68 97	56 56	57 95	01 88	11 89	48 07	42 60	11 92
65 58	60 87	51 09	96 61	15 53	66 81	66 88	44 75	37 01	28 88
79 90	31 00	91 14	85 65	31 75	43 15	45 93	64 78	34 53	88 02
07 23	00 15	59 05	16 09	94 42	20 40	63 76	65 67	34 12	94 10
90 08	14 24	01 51	95 46	30 32	33 19	00 14	19 28	40 51	92 69
53 82	62 02	21 62	34 13	41 03	12 85	65 30	00 97	56 30	15 48
98 17	26 15	04 50	76 25	20 33	54 84	39 31	23 33	59 64	96 27
08 91	12 44	82 40	30 62	45 50	64 54	65 17	89 25	59 44	99 95
37 21	46 77	84 67	67 39	85 54	97 37	33 41	11 74	90 50	29 62

Each digit is an independent sample from a population in which the digits 0 to 9 are equally likely and is each has a probability of 1/10.

16 16 98 63 01 03 29 07 72 61	57 04 89 52 09 35 16 34 80 54	81 71 77 23 02 54 49 22 70 99	17 46 61 08 51 96 52 96 24 64	53 29 63 90 92 75 89 34 11 38	73 46 80 38 58 29 17 11 83 65	42 73 42 71 24 23 06 91 27 23	77 63 85 70 25 19 24 38 40 37	62 58 04 81 89 97 55 06 84 58	60 59 05 50 91 29 83 59 48 53
71 11 61 05 81 89 10 24 14 28	41 82 66 18 42 34 90 84 33 43	79 37 76 82 00 49 22 16 01 32	00 45 11 18 97 53 26 96 58 39	98 54 61 90 33 16 54 11 19 54	52 89 90 63 26 91 01 96 56 57	26 34 78 57 57 58 58 81 23 58	40 13 32 06 42 48 37 97 24 87	60 38 39 95 51 05 80 98 77 36	08 86 75 94 48 27 72 81 20 97
35 41 07 89 27 59 95 98 12 95	17 89 36 87 15 58 45 52 72 72	87 04 98 73 19 68 27 35 81 84	28 32 77 64 95 47 86 81 36 58	13 45 75 19 25 69 16 29 05 10	59 03 05 61 11 90 37 60 70 50	91 08 11 64 26 19 39 35 31 04	69 24 31 75 07 40 05 24 12 67	84 44 49 38 83 59 49 00 74 01	42 83 96 60 90 95 29 07 72 90
35 23 86 33 02 82 44 46 08 77	06 68 95 73 96 23 34 96 07 19	52 50 80 92 16 46 32 68 94 46	39 55 26 49 15 51 48 22 17 51	92 28 54 50 60 31 40 17 03 73	28 89 41 21 55 27 43 25 99 89	64 87 06 62 84 14 33 31 28 44	80 00 73 91 71 58 26 26 16 87	84 53 35 05 94 71 59 34 56 16	97 97 21 37 48 35 99 00 56 09
61 59 67 70 23 09 89 40 84 95	37 08 18 01 08 79 26 39 66 42	08 46 67 19 18 78 74 58 90 74	56 76 29 49 00 32 59 55 13 71	29 48 58 67 86 74 87 11 00 71	33 87 08 56 78 55 74 06 24 41	70 79 27 24 55 72 49 46 67 62	03 80 20 70 58 54 31 94 38 92	96 81 46 31 76 07 86 66 39 26	79 68 04 32 53 73 66 97 30 29
52 14 89 56 65 94 13 08 03 18	49 02 31 41 05 93 15 75 33 57	19 31 37 87 06 68 02 83 16 71	28 15 28 16 34 72 48 26 60 27	51 01 62 48 73 17 53 77 15 18	19 09 01 84 65 34 62 96 39 32	97 94 46 06 00 65 56 52 37 01	52 43 04 39 75 78 28 26 05 86	22 21 94 10 23 97 12 15 25 14	17 66 76 21 13 04 75 53 35 41
10 04 23 94 35 63 42 86 67 26	00 95 97 28 42 90 03 36 92 87	85 04 60 43 90 74 45 33 09 96	32 80 42 25 33 17 60 77 85 37	19 01 26 48 58 77 72 92 82 61	85 03 48 13 83 36 10 76 39 01	29 29 34 68 76 22 22 55 70 05	80 04 39 22 00 89 11 00 12 66	21 52 74 85 61 55 37 60 17 39	14 76 03 25 13 17 47 73 99 34
91 93 37 14 07 46 92 18 00 49	88 56 73 35 50 58 09 46 98 43	35 73 32 01 08 73 94 99 39 67	97 35 07 94 42 97 17 41 68 40	19 37 78 28 20 42 28 60 41 31	14 66 90 33 64 68 67 94 92 28	07 37 71 36 48 35 26 54 49 57	24 41 63 77 04 38 63 70 15 55	06 90 89 24 28 28 84 73 11 81	07 72 24 28 36 94 76 61 41 89
08 59 67 05 24 99 65 86 52 70	41 41 19 54 48 06 27 46 03 20	33 59 32 33 96 41 70 93 84 96	43 28 34 68 21 25 27 39 14 37	14 51 27 93 29 03 64 37 51 05	02 71 39 35 57 71 01 63 63 99	24 45 62 51 96 49 21 03 81 02	41 57 35 55 94 74 43 78 84 56	22 11 40 99 98 90 18 74 17 78	79 79 46 19 21 52 77 07 48 45
32 88 54 16 95 22 93 10 19 20	29 93 39 40 18 59 27 94 85 20	58 21 98 57 54 57 90 45 15 67	71 05 02 05 44 22 39 33 78 03	68 58 65 15 72 35 50 26 32 23	79 08 73 23 81 24 88 46 50 59	86 37 51 51 14 94 90 57 24 83	98 76 75 06 24 04 40 47 64 99	70 45 38 13 42 26 71 63 18 00	66 23 51 68 92 14 62 59 78 50

Each digit is an independent sample from a population in which the digits 0 to 9 are equally likely and is each has a probability of 1/10.

APPENDIX D
PRE-PETITION SCOPING MEETING CHECKLIST

PRE-PETITION SCOPING MEETING CHECKLIST

__ What type of delisting requested (one-time, conditional, upfront, standard).

__ Waste description (EPA Waste Code Number, physical).

__ Constituents for which EPA Listing is Based.

__ Waste generation process/treatment process and duration of waste generation (include process diagram).

__ Discussion of any existing waste sample concentrations.

__ Information on waste variability over time.

__ Waste variability by location in current storage or disposal location.

__ Volume of waste generated (annually).

__ Proposed waste disposal location, if delisted.

__ Constituents of concern in waste and methods used for this determination.

__ Proposed number of samples and analyses needed.

__ Multiple pH test analytical results.

__ Review of Petition Quality Assurance Project Plan requirements [Be sure to remind petitioner that a separate QAPP must be provided with the petition].

APPENDIX E
LIST OF EPA REGIONAL DELISTING CONTACTS

REGION 1

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REGION 8

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REGION 9

Cheryl Nelson
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REGION 10

Dave Bartus
Environmental Protection Agency
1200 Sixth Avenue (WCM-127)

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APPENDIX F
LIST OF STATE HAZARDOUS WASTE OFFICES
AND
STATES AUTHORIZED FOR DELISTING

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Israel Torres-Rivera
Commonwealth of Puerto Rico
Environmental Quality Board
Land Pollution Control Area

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Syed Syedali
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REGION III

STATE

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REGION IV

STATE

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Massoud Shoa

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REGION V

STATE

Minnesota (Authorized)

Wisconsin

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*** Michigan has only obtained a "partial" delisting authorization for wastes involving closure or partial closure activities.**

Ohio

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Illinois (Authorized)

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Indiana

Barry Steward
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REGION VI

STATE

Texas

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Texas Natural Resource Conservation Commission
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New Mexico

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Oklahoma

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Division of Solid & Hazardous Waste
Utah Department of Environmental Quality
P.O. Box 144880
Salt Lake City, UT 84114-4880
Phone: 801-538-6170
FAX: 801-538-6715

Colorado (Authorized)

Doug Knappe
Fred Dowsett x3342 (Alternate Contact)
Hazardous Material & Waste Management Division
Colorado Department of Public Health & Environment
4300 Cherry Creek Drive South
Denver, Colorado 80222-1530
Phone: 308-692-3414
FAX: 303-759-5355

REGION IX

STATE

Hawaii

Grace Simmons, Manager
Hazardous Waste Section
Solid and Hazardous Waste Branch
Environmental Management Division
Hawaii Department of Health
919 Ala Moana Blvd., Room 212
Honolulu, Hawaii 96814
Phone: 808-586-4235
FAX: 808-586-7509

Nevada

Dave Emme, Chief
Bureau of Waste Management
Nevada Department of Environmental Protection
333 W. Nye Lane
Carson City, Nevada 89706
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FAX: 702-885-0868

Arizona

Dennis Clayton, Manager
Hazardous Waste Section
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, Arizona 85012
Phone: 602-207-4103 or 4211
FAX: 602-207-4236

California

Peter J. Wood
Senior Hazardous Substances Scientist
California Environmental Protection Agency
Department of Toxic Substances Control
Hazardous Waste Management Program
State Regulatory Program Division
400 P Street, 4th Floor
Mail: P.O. Box 806
Sacramento, California 95812-0806
Phone: 916-322-4660
FAX: 916-322-1005
E-mail: "pjwldh@cwo.com"

Guam

Francis Damien, Director
Solid & Hazardous Waste Management Program
Guam Environmental Protection Agency
P.O. Box 22439, GMR
Barrigada, Guam 96921
Phone: 9-011-671-472-5703
FAX: 9-011-671-477-9402

REGION X

STATE

Oregon (Authorized)

Gary Calaba
Oregon Department of Environmental Quality
811 S.W. 6th Avenue
Portland, Oregon 97204
Phone: 503-229-6534
E-mail: "calaba.gary.j@deq.state.or.us"

Washington

Ty Thomas, Manager of HW Policy Unit
Washington State Department of Ecology
300 Desmond Drive, SE
Lacey, Washington 98503
Phone: 360-407-6758

Idaho (Authorized)

John Brueck
Idaho Department of Health and Welfare
Division of Environmental Quality
1410 N. Hilton Street

Boise, Idaho 83706
Phone: 208-373-0458 (v)
208-373-0417 (f)
E-mail: jbrueck@deq.state.id.us

Alaska

Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, Alaska 99501

NOTE: HIGHLIGHTED STATES ARE AUTHORIZED.

APPENDIX G
POLICY ISSUES

1. AMENDMENT TO SUBPART C - RULEMAKING PETITIONS; GROUNDWATER DATA IN DELISTING DECISIONS

To obtain a copy of this document contact your Regional office. Not contained in this document due to poor copy quality.

2. NOTICE OF DELISTING STRATEGIES AND PROCEDURES

To obtain a copy of this document contact your Regional office. Not contained in this document due to poor copy quality.

3. MEMO - NATIONAL POLICY FOR HAZARDOUS WASTE DELISTING PETITIONS

If the document is not legible, please contact your Regional office.

4. FEDERAL REGISTER NOTICE - OIL AND GREASE TESTING AMENDMENTS

This document can also be found on the Internet in the National Archives and Records Administration's Federal Register Online via GPO Access. The document was published in 64 FR 26315, May 14, 1999.

APPENDIX H
REGION SPECIFIC DELISTING GUIDANCE

REGION 2 DELISTING INFORMATION

Submitting the Petition

Anyone seeking to exclude (delist) a waste generated at a particular facility from the list in Subpart D of 40 CFR Part 261 will submit a petition to the Regional Administrator.

Facilities that manage their wastes in states with delisting authorization will petition the state for an exclusion rather than EPA.

If a facility is submitting a petition to the Federal government, an original of the petition should be forwarded by certified mail to each of the following:

Regional Administrator
U.S. Environmental Protection Agency, Region II
290 Broadway
New York, NY 10007-1866

U.S. Environmental Protection Agency, Region
Division of Environmental Planning and Protection
RCRA ProgramsBranch
File Management System
290 Broadway, 22nd Flr.
New York, NY 10007-1866

Two copies of the petition should also be submitted to:

U.S. Environmental Protection Agency, Region II
Division of Environmental Planning and Protection
RCRA Programs Branch
290 Broadway, 22nd Flr.
New York, NY 10007-1866

A certification statement [40 CFR 260.22(i)(12)] signed by an authorized representative must be included with the petition and with each petition addendum, including the submission of any additional information requested by EPA.

REGION 3 QUALITY CONTROL REQUIREMENTS FOR DELISTING

BACKGROUND

Region 3 policy mandates that for decision making purposes, all environmental data must be of known and documented quality. Sound environmental analytical measurements are essential to provide the data quality necessary to ensure effective decisions regarding environmental issues. Thus, the data submitted to the Region 3 Hazardous Waste Delisting Program must be generated with appropriate quality control (QC) procedures to ensure that this data is adequate for its intended purpose.

Quality Control Information

Each analytical method in SW-846 has specific quality control requirements. These requirements form the basis for establishing the quality of the analytical data. Thus, these requirements must be followed to ensure that the quality of the data can be verified. Chapter One of SW-846 contains a discussion of the QC protocols for waste analysis and provides general guidance in selecting and understanding QC protocols. However, this guidance does not replace the method specific requirements. These QC measures are critical to defining the quality of the data and should not be minimized under any circumstance. While many quality control parameters are method and matrix specific, the most common are discussed below.

Instrument Performance and Calibration

SW-846 methods offer specific instrument performance and calibration requirements for minimum instrument response, linearity of response, and qualitative identification. Calibration data should be submitted by the laboratory to verify that the method specific requirements have been met.

Blanks

The analysis of blanks allows the user to determine if sample results are being impacted by other sources of contamination.

- **Trip Blanks**
  Trip blanks are applicable to samples being analyzed for volatile organics. The samples are prepared in the laboratory using analyte-free water. These samples are transported to the sampling site and back to the laboratory without being opened until site samples are analyzed. These blanks measures contamination that may be introduced by the sample transport process.

- **Field blanks**
  Field blanks are samples that usually consist of deionized water that is exposed to the complete sampling and analysis protocol beginning with sample collection and ending with sample analysis. If the site samples are preserved, these blanks must be preserved also. These blanks measures contamination introduced during sample handling.

- **Method blanks**
  Method blanks are control samples that consist of all reagents and standards and are carried through the entire analytical procedure. These blanks measures contamination introduced in the laboratory.

Equipment Rinsates

The purpose of these samples is to determine the adequacy of decontamination procedures. These samples are specific to non-dedicated sampling equipment. Laboratory grade water is passed over decontaminated sampling equipment and captured in an appropriate sample container for analysis.

Matrix Spikes / Matrix Spike Duplicates
Known amounts of analytes (spikes) are added to environmental samples to generate a matrix spike. A matrix spike duplicate is prepared by splitting the matrix spike sample. These samples are subjected to the entire analytical process and then analyzed to determine if an acceptable amount of each spike is recovered. The recovery of the spike (accuracy) and the agreement between duplicates (precision) provide information on the appropriateness of the method for that particular sample matrix.

Field Duplicates
These samples are two separate samples taken from the same source or sampling location.

Surrogate Recovery
Surrogates are chemical analytes which exhibit similar chemical properties to those of the analytes of interest, but which are not normally found in environmental samples. They are added to every standard, QC sample, and environmental sample in known quantities prior to sample preparation. Percent recoveries are calculated for each surrogate analyte.

Deliverables and Reporting Requirements
In order to substantiate the validity of the reported data, specific information is needed. For each analysis, you must provide the following information:

- Test method used and the source of the test method (e.g. SW-846 8080)
- All preparation methods (e.g. extractions, digestions, sample clean-up methods)
- The specific parameter or characteristic for which the analysis was conducted
- The date of extraction and analysis
- The estimated quantitation limit
- The reporting units (mg/kg, mg/L)
- The names and model numbers of all equipment used in the analysis
- As applicable; percent solids, sample weight, percent moisture

In addition to the information presented above, your acceptance criteria for QC measurements must also be included. These criteria must not be less stringent than those specified by the method (Reference Section 6.7 of the EPA Guidance Manual for Petitions to Delist Hazardous Waste).

For each analytical parameter, samples (QC and facility-specific waste) must be analyzed and summarized per Table 1-1. Additionally, the report must provide a narrative that explains any inconsistencies or deviations in the reported analytical results. Please note that analytical results corrected based on quality control results (i.e., blank subtraction, spike recoveries) are **not acceptable as data for a delisting petition submission.**

Table 1-1

QC Measure	Frequency	Fraction	
Laboratory QC		Organic	Inorganic
Laboratory Control Standard	Per method specifications or one per analytical run, whichever is more frequent	X	X
QC Check Standard	Per method specifications	X	X
Initial and Continuing Calibration	Per method specifications	X	X
Surrogates	Per method specifications	X	
Method Blanks	Per method specifications	X	X
Calibration Blank	Per method specifications		X
Matrix Spikes / Matrix Spike Duplicates	One per matrix, per twenty (20) samples or each sample batch, whichever is greater	X	X
Holding Time	Parameter Specific	X	X
Field QC			
Trip Blanks	One per shipping cooler	X[1]	
Field Blank	One per day, per matrix	X	X
Equipment Rinsate	One per day, per matrix	X	X
Field Duplicates	One per matrix, per twenty (20) samples or each sample batch, whichever is greater	X	X

[1] Volatile organics only

ANALYTICAL DELIVERABLES LISTING

General

I. Chain of Custody

II. Narrative - Describe analyses performed and discuss any problems associated with the data reported.

Organic Deliverables

III. Volatiles / Semi-Volatiles Data

A. QC Summary

- Surrogate recovery summary
- Matrix spike / matrix spike duplicate recovery summary
- Method blank summary (list associated samples for each method blank)
- Tuning summary for BFB and DFTPP in chronological order by instrument

B. Sample Data (for each sample)

- Form I (from Organic Statement of Work) or laboratory generated reports
  - header must include the following:
    - sample number
    - date received
    - matrix
    - units reported
    - amount of sample
    - date extracted (semi-volatiles only)
    - percent moisture (soils only)
    - pH (aqueous samples only)
- Reconstructed Ion Chromatogram (RIC)
  - label internal and surrogate standards
  - normalize to highest non-solvent peak
  - header must include the following:
    - sample number
    - date and time of injection
    - instrument ID
    - laboratory file ID
- Quantitation reports
  - header must include:
    - same as for RIC
    - dilution factors
    - amount injected
- Compound identification (for all compounds detected except surrogates and internal standards)
  - raw mass spectra
  - background subtracted mass spectra
  - standard spectra

C. Standards

- Initial calibration form, including:
  - date calibrated
  - time calibrated
  - applicable file IDs
  - response factors for each compound at each level
  - mean response factor
  - percent relative standard deviation (%RSD)
- RIC and quantitation report for each standard in initial calibration in chronological order by instrument
- Continuing calibration form, including:
  - date and time calibrated
  - mean response factor from initial calibration
  - response factor from continuing calibration
  - percent difference (%D)
- Internal standard area summary in order by instrument, including:
  - continuing calibration internal standard areas
  - continuing calibration internal standard retention times
  - internal standard areas and retention times for all samples quantitated against continuing calibration

D. Raw QC

- Tuning BFB / DFTPP
  - bar graph spectrum
  - mass listing
- Blank data
  - Form I or lab generated report forms for each method blank
  - RIC
  - quantitation report
  - mass spectrum of each positive result
    (above same header as samples)

- Matrix spike / matrix spike duplicate data
  - Form I or lab generated report forms
  - RIC
  - quantitation report
  - spectra not required

E. Copies of Sample Preparation / Extraction Logbooks
Run Log / Injection Logbook

IV. Pesticide / PCB Data

A. QC Summary

- Surrogate recovery summary
- Method blank summary
- Matrix spike / matrix spike duplicate recovery summary

B. Sample Data Results

- Form I or lab generated report forms
- Chromatogram
    - header must include:
        - sample number
        - volume injected
        - date and time of analysis
        - column identification
        - instrument identification
        - all positively identified compounds labeled
- Confirmation chromatogram (if applicable)
    - header same as above
- GC integration report
- Gel Permeation Chromatography (GPC), if performed
- GC / MS Spectra (if confirmation on GC / MS performed)

C. Standards Data

- Pesticide evaluation standards summary
- Pesticide / PCB standard summary, including:
    - calibration factors
    - percent difference (%D) for continuing and initial calibration
- Pesticide / PCB standards data

- Chromatogram and integration reports in chronological order by instrument
  - label all peaks for individual compounds
  - list total ng injected for each standard
  - retention time and peak areas
  - date and time injected
  - GC column identification
  - GC instrument identification

D. Raw Data

- Blank data
  - Form I or lab generated result forms
  - chromatogram
- Matrix spike / matrix spike duplicate
  - Form I or lab generated result forms
  - chromatogram
  - integration reports

Inorganic Deliverables

V. Metal and Non-Metal Analyte Data

A. Sample Data Results (including QC samples). Summarized data for each sample including:

- Sample number
- Date received
- Matrix
- Percent solids (for non-aqueous samples only)
- Concentration units
- Analyte and determined concentration

IV. QC Data (for those QC samples required by the method used for each specific analyte)

A. Initial and Continuing Calibration Results

- Source of calibration standard(s)
- Concentration units
- True value (for each analyte)
- Measured value (for each analyte)
- Percent recovery (for each analyte)

B. CRDL Standard Recoveries for AA and ICP. (If the method does not require such an analysis, this information is omitted.)

- Same as listed for initial and continuing calibration

C. Blanks

- Preparation blank matrix
- Instrument and preparation blank units

- Initial calibration blank results
- Continuing calibration blank results
- Preparation blank results

D. ICP Interference Check Sample

- ICP instrument ID (only if more than one ICP is used)
- Concentration units
- True values (for each analyte and solution)
- Found values (for each analyte and solution)
- Percent recovery (for each analyte)

E. Matrix Spike Sample Recovery

- Matrix
- Concentration units
- Control limits
- Spike sample result
- Unspiked sample result
- Amount of spike added
- Percent recovery

F. Post Digest Spike Sample Recovery. (If the method does not require such an analysis, this information is omitted.)

- Same as for matrix spike recovery

G. Duplicates (note: for laboratory duplicate analysis results only)

- Matrix
- Percent solids for sample and duplicate (if non-aqueous matrix)
- Concentration units
- Control limit
- Sample results
- Duplicate results
- Relative percent difference (% RPD)

H. Laboratory Control Sample

- Matrix
- Concentration units
- True value
- Found value
- Percent recovery
- Control limits (if applicable)

I. Method of Standard Addition Results (for each analyte result determined by the method of standard additions)

- Sample number
- Analyte
- 0 ADD ABS
- 1 ADD and ABS

- 2 ADD and ABS
- 3 ADD and ABS
- Final concentration
- Correlation coefficient

J. ICP Serial Dilution

- Matrix
- Concentration units
- Initial sample result
- Serial dilution result (corrected for dilution)
- Percent difference

K. Instrument Detection Limits

- Instrument ID's
- Wavelength
- Type of background correction
- Instrument detection limit

L. ICP Linear Ranges

Additional Information for Raw Data Requirements for Inorganic Analyses

For each reported value, the laboratory should include in the data package all raw data from the instrument used to obtain the sample values and the QA / QC values reported. Raw data must contain all instrument readouts used for the sample results, including those readouts that may fall below the IDL.

All AA and ICP instruments should provide a legible hard copy of the direct real-time instrument readout (i.e., strip charts, printer tapes, etc.). A photocopy of the direct sequential instrument readout must be included. A hardcopy of the direct instrument readout for cyanide should be included if the instrumentation has the capability.

All raw data should include intensities (ICP) and absorbances (AA) with concentration units (unless instrument direct readout is in concentration units). All flame and furnace AA data should be grouped by element.

Also include:

- Instrument used, any instrument adjustments, data corrections or other apparent anomalies on the measurement record, including all data voided or data not used to obtain reported values and a brief written explanation.

- All information including date for furnace analysis clearly and sequentially identified on the raw data, including sample number, sample and analytical spike data, percent recovery, coefficient of variation, full MSA data, MSA correlation coefficient, slope and y intercept of linear fit, final sample concentration (standard addition concentration), and type of background correction used.

- Time and date of each analysis. Instrument run logs can be submitted if they contain this information. If the instrument does not automatically provide times of analysis, these should be manually entered on all raw data for initial and continuing calibration verification and blanks, as well as interference check samples and linear range analysis.

- Integration times for AA analyses.

Specifically for Cyanide, Sulfide, and Oil and Grease analyses, include the following:

- Digestion or extraction method
- Log book entries
- Weights used
- Calculations
- Quality Control data

REGION 6

Elements of the Region 6's Delisting Evaluation Process

Attachment 1 provides an overview of the steps in the delisting process - from petition submittal to publication of a final decision in the Federal Register. Each of these steps are described in the paragraphs to follow. You should realize that, because delisting is a rulemaking process, a final decision on your petition typically takes about **180 working days**. To expedite this process, a visit the Regional Office to meet with Agency delisting representatives is **mandatory**. This meeting should be used to answer questions regarding regional delisting procedures and what information is needed in a complete delisting petition.

Our evaluations and decisions are subject to review within the Agency and, once published as a proposed rule, public comments are requested prior to finalization of a decision. You may contact us if you have questions or need more information about the review process. Additionally, you may send a sampling and analysis plan to us for review before committing resources to actual sampling and analysis and formal petition preparation.

Pre-Petition Process

Notification of Interest

The Region requests that those facilities seriously interested in sending a delisting petition contact the region by letter. The letter should state the waste type proposed for delisting, give a brief process description, and the justification for the petition (why the waste is no longer hazardous). After receipt of this notice, an EPA Delisting Project Leader will be assigned.

The Project Leader will contact the facility within ten days of receipt of the notice to discuss the Delisting process.

Pre-Petition Scoping Meeting

If after review of the Delisting Guidance Manual, the potential petitioner still expects sending a Delisting Petition, a meeting must be scheduled with The Delisting Project Leader and members of The Delisting Review Team. This pre-petition scoping meeting is a **mandatory** part of the Regional Delisting Program and must be held prior to any petition submittal.

Appendix D of this guidance manual provides a checklist of the information to be discussed at the Pre-Petition Scoping Meeting. The petitioner shall bring to this meeting the items listed in the Pre-petition Scoping Meeting Checklist, as well as, any other pertinent data that will help development of a complete petition. During the Scoping Meeting, EPA and State reviewers of the petition will meet with the petitioner to discuss the waste type, process and disposal information, and sampling and analysis plan (see Attachment 2 for analysis of constituents of concern).

The result of this meeting should be a clear expectation on behalf of

the petitioner as to what is to be expected by EPA for a complete Delisting petition. The meeting also allows the Delisting Review Team to fully understand the process of generation and waste disposal. A meeting summary should be prepared by the petitioner and sent to the project lead within 10 days of the scoping meeting.

Delisting Petition Process

After the scoping meeting is held, the petitioner may send a delisting petition as soon as the issues agreed upon during the scoping meeting have been addressed.

1. When a *complete* petition[2] is received by the Regional Delisting Office, the 180 day processing clock shall begin. Within 5 days of the receipt of the petition, the project leader shall send a letter to the facility acknowledging receipt of the petition.

2. Within 7 days of receipt of the acknowledgment letter, the petitioner shall send to the local newspaper a public notice regarding the submittal of the delisting petition to EPA and notify persons on its facility mailing list (see Attachment 3). The verification of this action (i.e., affidavit of publication) must be sent to the project leader within 2 days of publication in the newspaper.

3. If there are checklist items for which the petitioner's response is incomplete or ambiguous, the project lead may contact the petitioner and request the information by telephone or if the list of deficiencies is substantial he may choose to issue a NOD, the time clock will be reset during this time. The process clock will stop while the petitioner gathers and resubmits the deficient items and be restarted when the documents are resubmitted. If the deficiencies are major, (i.e., the necessary response time for the petitioner is longer than 15 days), the project lead will send a letter to the petitioner offering the option of withdrawal or denial.

   Any petition withdrawn/or denied will not keep its review prioritization if the necessary response time is greater than 15 days. Upon resubmittal, the petition will be placed back in the cue behind all petitions previously received.

4. The petition will be reviewed by the EPA Project Leader, who recommend a decision and prepare the draft Federal Register Notice and decision document for internal review. These recommendations will be sent to the State and EPA Headquarters for comment. If no comments from the State and the Delisting Review Team are received within 30 days, the preparation of Federal Register Notice and decision document shall proceed. Any substantive comments received will be incorporated into decision document and Federal Register Notice.

A complete petition is a petition that contains all the checklist items except the certification of public notice.

The notice shall be published in the Federal Register for a 45 day comment period. For facilities that opt to withdraw their petitions, no Federal Register publication is necessary.

The project lead will contact the petitioner by telephone to provide the scheduled date of publication in the Federal Register, if a decision is issued.

5. Within 1 day of receipt of the phone call regarding the scheduled date of publication, the petitioner shall send to the local newspaper a public notice regarding the opening of a 45 day comment period for the delisting petition procedure and notify persons on its facility mailing list. The verification of this action (i.e., affidavit of publication) must be sent to the project leader within 2 working days of its publication.

6. After the comment period ends, if comments are received, they shall be addressed, and incorporated into the final Federal Register Notice. The final decision document and Notice will be sent to the State for comments.

7. If no additional comments from the States are received, the final notice will be published in the Federal Register and the decision letter will be sent to the petitioner.

Within 1 day of receipt of the decision letter, the petitioner shall send to the local newspaper a public notice regarding the final decision and notify persons on its facility mailing list. The verification of this action (i.e., affidavit of publication) must be sent to the project leader within 2 working days of its publication.

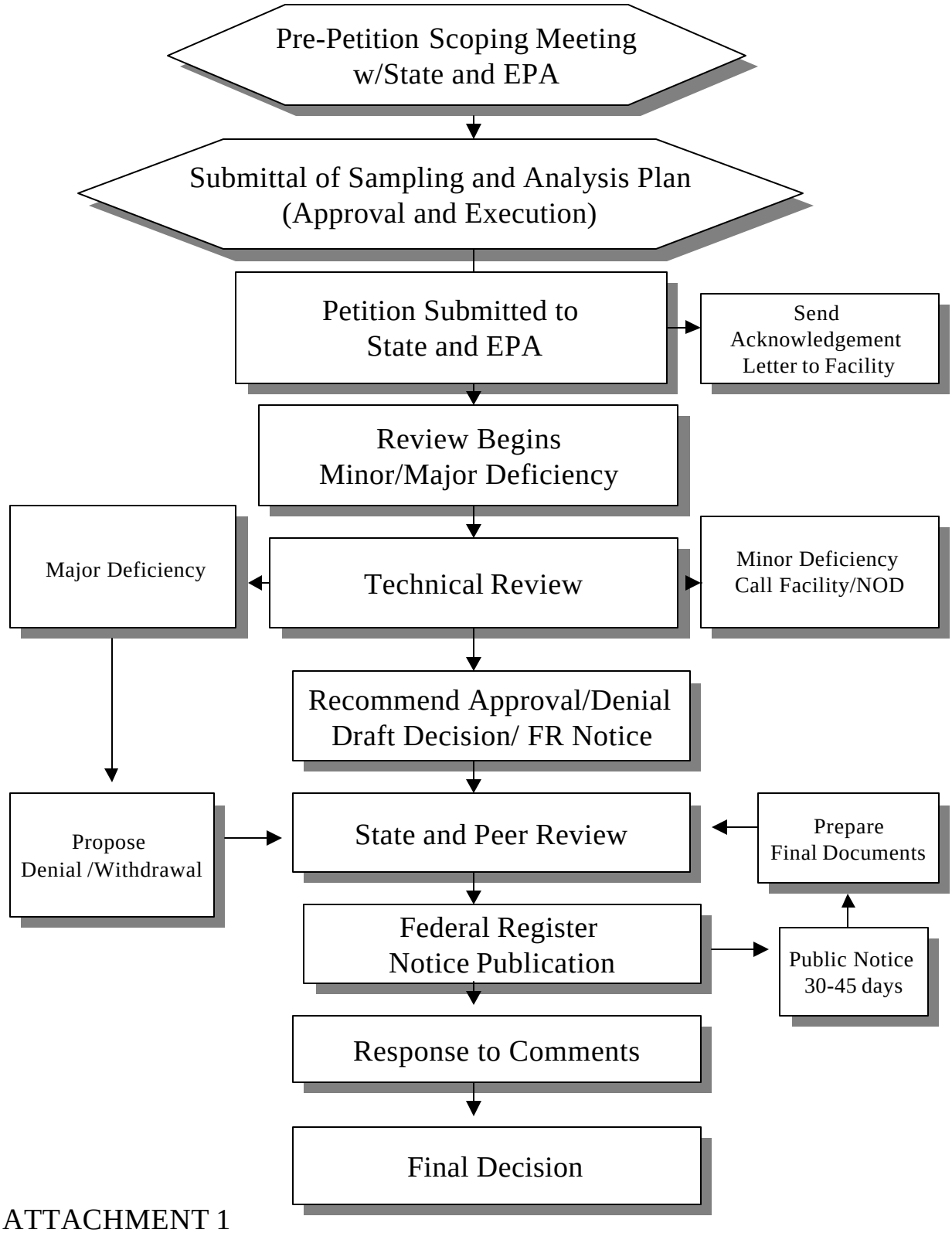
Petition Prioritization

Petitions will be evaluated on a first-come, first-served basis. Petitions withdrawn or denied that a petitioner wishes to resubmit will be considered new petitions and placed next in line for review. There is no retention of the original review status if the response time for deficiencies is greater than 15 days. Petitioners that wish to resend a petition must also have another scoping meeting to discuss the issues being addressed or the listed reasons for denial of the petition.

Notification of Disposal of Federally Delisted Wastes

Petitioners must notify any State Environmental Agency of its transport through or disposal of a federally delisted waste within 60 days of this action. This requirement will be listed as a condition of each delisting. Federally Delisted Wastes evaluated in will not be valid in any authorized state. In Region 6, the State of Louisiana has been authorized to make delisting decisions. A list of state contacts and addresses is provided in Appendix F.

Region 6 Delisting Process Flow Chart



ATTACHMENT 1

ATTACHMENT 2

ANALYSES FOR CONSTITUENTS OF CONCERN AND HAZARDOUS WASTE CHARACTERISTICS

Determining Constituents of Concern

The constituent list at 40 CFR 264 Appendix IX is the minimum constituent list for initial analysis. This list already includes all constituents in the 40 CFR 261.24 Toxicity Characteristics list and those shown in Exhibit 4, Constituents of Concern for Wastes From Petroleum Processing, of this delisting guidance document. This list should be expanded to include any other constituents for which the wastes may have been listed as reflected in 40 CFR 261 Subpart D, Lists of Hazardous Wastes, as well as any other hazardous constituents known to have been managed at the site.

The first sample should be analyzed for total concentration of each of the constituents on this initial list of constituents of concern (COC) using specified methodology with minimum detection levels adequate to quantify concentrations as low as health based levels. Using results of this totals analysis, a final list of constituents can be prepared to include only the metals and organics from the 40 CFR 261.24 Toxicity Characteristics list plus all additional constituents that were detected in the first sample when analyzed for totals concentrations of constituents on the initial list.

TCLP analyses should then be run on the first sample for constituents on this final COC list. All subsequent samples should be analyzed for totals concentrations and by the TCLP methodology for all constituents on the final COC list.

Multiple pH testing. TCLP analyses using three different extraction fluids in a pH range from 3-11. See Attachment 4.

Total oil and grease analysis. If the petitioned waste contains at or above one percent total oil and grease, we prefer that you conduct the Extraction Procedure for Oily Wastes (OWEP; SW-846 Method 1330) analysis and use the TCLP in place of the EP.

Cyanide analyses, deionized water should be used in place of the acid leaching medium.

Total Sulfide and Total Cyanide testing should be conducted.

Total Chromium. If the levels of total chromium in your waste exceed one percent, we recommend that you also analyze for the level of hexavalent chromium present.

Characteristics Testing. Analyses for the characteristics of ignitability, corrosivity, or reactivity; or provide a detailed explanation regarding why the waste does not exhibit a given characteristic.

ATTACHMENT 3
EXAMPLE PUBLIC NOTICES

PUBLIC NOTICE
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 6

Notice of Proposed Issuance of an Exclusion
of Certain Solid Wastes Generated at a Facility
from the list of Hazardous Waste

The U.S. Environmental Protection Agency (EPA) has reviewed a petition to delist (waste type and waste number) from **[**Company Name and location**]**. The review was conducted pursuant to the Resource Conservation and Recovery Act (RCRA) as amended by the Hazardous And Solid Waste Amendments of 1984 (HSWA). EPA has made a tentative decision to issue exclusion for these wastes to [Company Name, (EPA Identification Number].

The purpose of this notice is to open the public comment period for the Proposed Decision regarding the petitioned waste. A notice will be published in the Federal Register on Date.

All persons, including the applicant, who wish to comment on the Proposed exclusion should submit their comments in writing to:

U.S. EPA, Region 6
Multimedia Planning and Permitting Division
(6PD-O)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202
ATTN: Mr. William Gallagher, Delisting Chief

All written comments must be postmarked by _____

___ , to be considered in formulating a final decision. All persons, who wish to request a public hearing concerning the proposed action may do so by submitting a written request to the above mentioned address. Any request for a hearing shall state the nature of the issues to be raised in the hearing. All requests must include the requestor's name and address.

EPA's procedures for public comment, requesting a public hearing, and reopening the public comment period may be found in 40 CFR 124.10, 40 CFR 124.12, and 40 CFR 125.14 (48 Federal Register 14264, April 1, 1983, as amended in 49 Federal Register 38051, September 26, 1984).

EPA will notify the applicant and each person who submits written comments or requests notice of the final decision. A final decision means a final decision to issue, revoke or deny the proposed exclusion. The final decision will become effective on the day a final notice is published in the Federal Register.

Further information including the administrative record, delisting petition and draft Federal Register Notice may be viewed at the EPA FOIA Review Room, 7th floor at the above address between 8:30 a.m. and 4:00 p.m., Monday through Friday. The draft Federal Register Notice and all other background information will also be available for review at the **[State Agency Name and Address,** i.e., ODEQ, Hazardous Waste Management Service, 1000 NE Tenth Street, Room 1203, Oklahoma City, Oklahoma 73117-1299**]**.

PUBLIC NOTICE
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 6

Notice of Final Approval of an exclusion
of Certain Solid Wastes Generated at a Facility
from the List of Hazardous Waste

The U.S. Environmental Protection Agency (EPA) has reviewed a petition to delist (waste type and waste number) from **[**Company Name and location**]**. The review was conducted pursuant to the Resource Conservation and Recovery Act (RCRA) as amended by the Hazardous And Solid Waste Amendments of 1984 (HSWA). A tentative decision was proposed in the Federal Register and a 45-day public comment period was opened on _____ . EPA has made a final decision to issue an exclusion for these wastes to [Company Name, (EPA Identification Number].

The purpose of this notice is to inform the interested parties of the final decision regarding the petitioned waste. A notice will be published in the Federal Register on _____ ___. The final decision is effective on the date the final notice is published in the Federal Register.

EPA will notify the applicant and each person who submits written comments or requests notice of the final decision. A final decision means a final decision to issue, revoke or deny the proposed exclusion. The final decision will become effective on the day a final notice is published in the Federal Register.

All persons, including the applicant, who would like information on the final exclusion may contact:

U.S. EPA, Region 6
Multimedia Planning and Permitting Division
(6PD-O)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202
ATTN: Mr. William Gallagher, Delisting Chief

Further information including the administrative record, delisting petition and Federal Register Notice may be viewed at the EPA FOIA Review Room, 7th floor at the above address between 8:30 a.m. and 4:00 p.m., Monday through Friday. The Federal Register Notice and all other background information will also be available for review at the **[State Agency Name**

and Address, i.e., ODEQ, Hazardous Waste Management Service, 1000 NE Tenth Street, Room 1203, Oklahoma City, Oklahoma 73117-1299**]**.

PUBLIC NOTICE
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 6

NOTICE OF SUBMITTAL OF DELISTING PETITION
IN ACCORDANCE WITH REQUIREMENTS OF 40 CFR 260.20 & 260.22

This notice is to inform the public of the following facility's submittal of a delisting petition to the Environmental Protection Agency (EPA), Region 6.

GENERAL FACILITY INFORMATION:

FACILITY OWNER/OPERATOR: [Name of Company]

ADDRESS:

FACILITY LOCATION: [Physical Location]

DATE THAT DELISTING PETITION WAS SUBMITTED TO EPA:

GENERAL DESCRIPTION OF DELISTING PROCEDURE:

EPA has promulgated standards under Subtitle C of RCRA that regulates the process of delisting hazardous waste. Waste are designated as hazardous in two ways: (1) solid waste that exhibit certain characteristics (those listed in 40 CFR Part 261, Subpart C) and (2) solid wastes that are specifically listed as hazardous (those listed in 40 CFR Part 261, Subpart D). As set forth in Subpart C, wastes that are characteristic ally hazardous remain so until they no longer exhibit the characteristic. It is the responsibility of the generator to determine whether a solid waste exhibits a hazardous waste characteristic.

It is recognized that a listed waste generated at a particular facility may not be hazardous. Individual wastes may vary depending on raw materials, industrial processes, and other factors. Therefore, 40 CFR sections 260.20 and 260.22 contain a procedure whereby a facility can petition EPA to exclude or "delist" such a listed waste.

DESCRIPTION OF WASTE TO BE DELISTED: [Briefly describe the physical/chemical composition of the waste, EPA Hazardous Waste Numbers]

BASIS FOR PETITION: [Describe briefly reasons why waste should be delisted]

ADDITIONAL INFORMATION: Additional information regarding EPA's delisting procedures and the

petition submitted by [**Facility Name**] may be obtained by contacting:

U.S. Environmental Protection Agency, Region 6
Multimedia Planning and Permitting Division (6PD-O)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202
ATTN: Mr. Bill Gallagher, Delisting Chief

ATTACHMENT 4

Multiple pH Test Protocol

Perform Method 1311-TCLP from SW-846, but modify the method in using three of the following leaching solutions for all constituents (including cyanide):

- Extraction fluid #2 glacial acetic acid reagent water with a pH of 2.88 +/- 0.05 and described in Method 1311 Volume 1C Chapter 8.4 Section 5.7-Extraction Fluid Page 6 Revision 0 July 1992 in the SW-846;

- Extraction fluid #1 glacial acetic acid reagent water and sodium hydroxide with a pH of 4.93 +/- 0.05 and described in Method 1311 Volume 1C Chapter 8.4 Section 5.7 Extraction Fluid Page 5 Revision 0 July 1992 in the SW-846;

- Reagent water with a pH* 7.0 +/- 0.5 described in Method 1311 Volume 1C Chapter 8.4 Section 5.2 Reagent water Page 5 Revision 0 July 1992 in the SW-846;

- 0.025 molality sodium bicarbonate + 0.025 molality sodium carbonate with a pH of 10.01 +/- 0.05 and described in Standard Methods for the Examination of Water and Wastewater 18th Edition 1992 Page 4-67; and

- 0.1 Normality NaOH with a pH of 13.00 +/- 0.05.

Note: Measure and record the pH of the leaching solution and also measure and record the pH of the TCLP extract as requested in Volume 1C Chapter 8.4 Section 7.2.14 on page 13 in Revision 0 July 1992 of the SW-846.

RATIONALE

o Disposal of a delisted waste is allowed under a number of

environmental conditions. The Agency wishes to verify that the petitioned waste will remain stable in a variety of pH environments. Our suggested range of pH (2.88, 4.93, 7.0, 10.01, 13.00) leaching solutions are established from the pH range specified in the Method 1311-TCLP from SW-846.

*The measurement of pH in Type II (ASTM D 1193 - 91) reagent waters has been eliminated from the specification, however a pH measurement is required here in order to have a pH reading in our five point pH modified TCLP.

ATTACHMENT 5

RISK-BASED DELISTING PROCEDURE

A comprehensive program for the delisting of RCRA wastes has been developed. A cornerstone of this program is the Delisting Risk-based Process. This process has been compiled into a user-friendly software program. The *Delisting Risk Assessment Software* (DRAS) is a Windows-based software that performs a risk assessment on wastes petitioned for delisting. All equations and parameters used in the complex multi-pathway risk assessment are presented in the *Delisting Technical Support Document*. The risk process considers the potential for release of RCRA wastes from a landfill or a surface impoundment. The delisting process evaluates whether a waste would release hazardous chemicals at concentrations exceeding acceptable levels (health-based numbers or HBNs) at a point of exposure (POE). The risk-based process evaluates potential releases from the waste management unit via surface pathways and groundwater pathways.

The process considers the potential for release from of the RCRA wastes from a landfill or a surface impoundment. The analysis predicts surface water releases, air volatilization, air particulate releases, and groundwater contamination. The EPA Composite Model for Leachate Migration with Transformation Products (EPACMTP) fate and transport model was used to derive dilution attenuation factors (DAFs) for prediction of groundwater waste constituent concentrations. Risk is assessed for the following routes of exposure: (1) ingestion of contaminated groundwater; (2) dermal contact during bathing with contaminated groundwater, (3) inhalation of volatiles during showering with contaminated groundwater; (4) ingestion of contaminated fish; (5) ingestion of contaminated surface water bodies; (4) inhalation of windblown particulates and volatiles from a waste management unit, and (5) ingestion of soils contaminated with windblown waste constituent particulates. Generally, the greatest risks determined for waste constituents considered for delisting resulted from potential groundwater exposure—that is, chemical releases to groundwater and subsequent exposure via groundwater exposure pathways.

In the Delisting Risk-based Process, the DRAS performs two analyses of petitioned wastes: (1) a screening analysis that back-calculates maximum Toxicity Characteristic Leaching Procedure (TCLP) and Total waste constituent concentrations at prescribed risk levels for all exposure pathways; and (2) a cumulative risk and hazard analysis that calculates the wastes cumulative carcinogenic risk and noncancer hazard index. The maximum TCLP and Total waste constituent concentrations, called the "delisting levels",

are determined for each waste constituent. Delisting levels are established for multiple batch delistings. The delisting level is the maximum concentration allowed for a waste constituent for any given waste batch and is specified in the federal register (FR) decision notice. The delisting FR notice will indicate the maximum delisting level (both TCLP and Total) for each waste constituent and specify all monitoring requirements.

The cumulative risk analysis is performed for decisions involving one time (single batch) delistings and delisting decisions are made according to a target risk range of $1x10^{-4}$ to $1x10^{-6}$ and a hazard index (HI) of 1. For the DRAS to calculate the potential risks associated with a particular waste stream petitioned for delisting, the user must enter required information about the petitioned waste. The following waste-specific information must be provided for the DRAS to estimate risks and hazards associated with potential exposure to the petitioned waste stream:

- The maximum annual or total waste volume of the petitioned waste
- The maximum total concentration of each chemical constituent in the petitioned waste
- The maximum Toxicity Characteristic Leaching Procedure (TCLP) concentration of each chemical constituent in the petitioned waste
- The number of years the petitioned waste is projected to be generated

The *Delisting Technical Support Document* (DTSD) describes the risk-based methodology used to perform the screening-level analysis and to compute cumulative risks and HIs for a petitioned waste stream. The DTSD provides documentation of all equations, data and default parameters employed in the risk analysis. The DTSD provides background information about the algorithms and equations used in conjunction with DAFs to compute risks. This information is intended to aid regulatory authorities, petitioners, and decision-makers in understanding the risk procedures used in making hazardous waste delisting determinations. The health-based levels used by the DRAS in delisting decision-making are updated periodically in order to stay consistent with the latest drinking water standards (i.e, Maximum Contaminant Levels), risk information, and toxicologic data (a large number of EPA verified health-based levels are available through EPA's Integrated Risk Information System, IRIS). In addition, the DRAS is periodically revised to reflect Agency-adopted modifications to the exposure assessment and risk assessment methodology. Exposure assessment algorithms, the health-based levels and models used in delisting evaluations are subject to change as improved information becomes available.

Using standard chronic risk assessment algorithms, the DRAS generates upper-limit individual waste constituent source concentrations called delisting levels that are protective of the receptor for the defined exposure pathways. However, the delisting levels generated in this manner for certain constituents can be extremely high in their absolute concentrations (approaching those of pure compounds). Under certain circumstances, the generated delisting levels may not be the appropriate waste management concentration limits for the waste management unit. For example, a modeled chronic risk scenario (volatile air emissions) cannot be relied upon if the source concentrations exceed critical levels under certain circumstances, such as soil concentrations exceeding a chemical's soil saturation.

Above certain concentrations, compounds may exist in free phase and exhibit behavior different from that assumed by the model. Moreover, were wastes allowed to be disposed of at very high concentrations,

acute exposures could occur at the waste management unit itself. Some of these high constituent concentrations could interact with and damage liner systems. The DRAS has been programmed to identify total waste constituents predicted at nominally high concentration levels (10,000 [ppm 1 percent by weight or greater). Delisting levels in excess of 10,000 p.m. are highlighted in red on the Results Screen of the DRAS. When the DRAS computes a delisting level that exceeds 10,000 ppm the petitioned waste containing constituents concentrations above this value should be reviewed on a case-by-case basis. The delisting levels (exit values) are not altered to reflect this ceiling review. The DRAS provides the user with the calculated delisting level based on the waste constituent concentrations, the waste volume, and the risk level selected by the user.

A soil saturation value represents the contaminant concentration in soil at which the adsorptive limits of the soil particles and the solubility limits of the available soil moisture have been reached. Above this concentration, pure or free-phase compound is expected in the soil. The EPACMTP modeling results may not accurately predict potential groundwater concentrations at downgradient receptor wells when waste constituent concentrations exceed soil saturation values. The DRAS compares soil saturation values with calculated delisting levels and notifies the user when a waste constituent's total delisting level exceeds its soil saturation value. When the DRAS calculates a delisting level greater than the calculated soil saturation, the delisting manager should consider setting the delisting level equal to the soil saturation value in accordance with soil screening guidance (U.S. EPA 1996f).

The TC Rule was published on March 29, 1990, in 55 FR 11798 and established regulatory levels for 40 nonhydrolyzing or minimally hydrolyzing constituents. A solid waste exhibits the characteristic of toxicity if the (TCLP) extract from a representative sample of the waste contains a concentration equal to or greater than the concentration listed in 40 CFR 261.24(a) for any of the waste constituents listed. The regulatory levels were generated based on a health-based chronic toxicity limit and a DAF of 100 developed using the EPACML. The health-based chronic toxicity reference levels for the toxicity characteristic constituents were generated using chronic RfDs, carcinogenic risk-specific doses, or MCLs. The TC rule regulatory levels are not to be exceeded. Because the DRAS generates levels using different modeling and exposure scenarios, delisting levels for the 40 constituents may be below the regulatory levels. Therefore, the DRAS compares a waste constituent's leachate concentration delisting level concentration, called the maximum allowable TCLP concentration, with the waste constituent's TC Rule regulatory level. If the maximum allowable TCLP concentration exceeds the TC Rule regulatory level, the DRAS notifies the user of the exceedance.

An ecological risk assessment is performed by the DRAS. The assessment is based upon an approach that evaluates the movement waste constituents from their WMUs, through different pathways, to the points where ecological receptors are expected to be exposed to these constituents. In selecting the ecological exposure pathways, U.S. EPA considered the evaluated WMUs, the landfill and surface impoundment, and the potential for ecological exposure at these non-Subtitle C waste management units. Potential exposure to two generic ecosystems was reviewed: A freshwater-based ecosystem and a terrestrial-based ecosystem. Terrestrial-based exposure from wastes disposed to landfills is minimized by regulations under 40CFR §258. EPA believes terrestrial exposures to ecological receptors to be minimal. EPA considered the potential for exposure to the freshwater ecosystem from wastewater runoff from a landfill receiving

delisted wastes. The DRAS compares the predicted ambient waste constituent concentration in a hypothetical stream system with the constituent's toxicity reference value (TRV) for protection of the ambient water community. The TRV is developed to protect the entire community, not one particular species. For highly bioaccumulative waste constituents (log K_{ow} > 4.0 or BCF > 100), such as PCBs or dioxin, the user should consider that bioaccumulation of the waste constituent through the food web may occur. Under these circumstances, the ambient TRV value may not be protective. The current version of the DRAS does not account for bioaccumulation of waste constituents in the aquatic community. When assessing ecological impacts from the runoff of waste constituents having a log K_{ow} > 4.0 or a BCF > 100, the user should consider the potential for bioaccumulative impacts within the food web or benthic community.

APPENDIX I
EVALUATION FORM

EVALUATION FORM

The EPA is interested in how worthwhile users have found this Delisting Guidance Manual, and what changes can be made to the Manual to make it a more valuable resource. To help in this effort, we would appreciate your response to the following questions.

Overall, I feel this Manual is:

_____ Very Useful

_____ Somewhat Useful

_____ Not Useful

I. Please indicate which sections of the Manual were particularly helpful.

II. Which sections were of little use? Why?

III. Please indicate whether you feel that the help of outside consultants is necessary to use the Manual when preparing a petition. If yes, why?

IV. What additional information, if any, would you like to see

included in the Manual.

V. Please provide any additional suggestions or comments regarding the Manual:

VI .(Optional)

Name:

Position:

Company:

Address:

Send to:

Delisting Team (6PD-O)
Multimedia Planning and Permitting Division
U.S. Environmental Protection Agency
1445 Ross Avenue
Dallas, Texas 75202