Comments
Dangerous Waste Regulations Amendments
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1. General Comment: Ecology proposes numerous state-specific deviations from the EPA Generator Improvements Rule (GIR) and other EPA programs throughout the pre-draft. Some of these changes are understandable based on existing State rules, e.g. use of terms "small quantity generators" and "medium quantity generators" versus EPA's "very small quantity generators" and "small quantity generators" to refer to generators of specified quantities of waste. However, in numerous cases, Ecology proposes deviations from EPA programs that are unexplained in the documents accompanying the pre-draft language. These deviations should be sufficiently explained to show why Ecology believes they are necessary to protect human health and the environment, justifying the additional burden placed on generators in Washington State.
2. WAC 173-303-016(4)(d)(ii). Ecology proposes to add a requirement to place recyclable material in a "storage unit" and label that unit with "the first date that the material began to be accumulated". The terms "storage" and "unit" have specific meanings in the Dangerous Waste Regulations that are not applicable to the holding of recyclable materials for reuse. Further, several "first date[s] that the material began to be accumulated" may apply to the "storage unit" when different types of recyclable materials are accumulated in the same location. The value of knowing "the first date" materials were accumulated is diminished once a single year passes, as the 75% turnover rule is no longer relevant to the date marked on the "storage unit". We recommend that the accumulation be documented through an inventory log or other appropriate method.
3. WAC 173-303-040, definition of "Facility". Ecology proposes to delete the word "or" from the phrase "…treatment, storage (or) disposing of dangerous waste…" The Generator Improvements Rule changes retain this word. The word "or" serves to complete the list of dangerous waste management activities and distinguishes these from management of hazardous secondary materials. We recommend it be restored.
4. WAC 173-303-040, definition of "Point of generation". Ecology proposes to add this definition and include the specific wording "including both time and place". A waste stream may normally vary in composition as it is generated, even in ways that render it non-dangerous part of the time. Examples would include laboratory analysis using a particular instrument where the instrument drains into a satellite accumulation container. The implication of this definition, as applied through proposed WAC 173-303-070(3)(a), is that a generator would have to designate wastes being continually accumulated in a satellite accumulation area (or CAA) to account for this variability. This would be impractical and imprecise at best. We recommend that the definition be limited to the "place" of generation, as was adopted under the Generator Improvements Rule.
5. WAC 173-303-040, definition of "Weekly inspection". Ecology proposes to add this definition requiring that such inspections be "conducted no more than seven consecutive calendar days from the last inspection". Ecology's proposed definition is drawn, in part, from a 1983 guidance document prepared by EPA that defines weekly inspections this way; Ecology has insisted that it must therefore define weekly inspections this way in order to be "consistent with the Federal program". However, EPA has more recently specifically addressed the timing of "at least

weekly" in the Generator Improvements Rule Response to Comments document ("Hazardous Waste Generator Improvements Final Rule Response to Comments Document, Summaries and Responses, October 4, 2016, available at https://www.regulations.gov/document?D=EPA-HQ-RCRA-2012-0121-0312). In this document, EPA stated that "The Agency believes the term 'at least weekly' to mean 'at least once each calendar week.' Under this interpretation, while the calendar day an inspection could occur may change from week to week, one inspection would be required to occur within the calendar week as identified by the generator…" Ecology has not provided a reason why the flexibility to perform a weekly inspection once each calendar week should not be offered to the regulated public. The outcome is 52 weekly inspections per year, regardless of how the time period between inspections is calculated. Weekly inspections should be conducted once each calendar week, consistent with EPA's interpretation.

6. WAC 173-303-070(1)(b). Ecology proposes to require any person "who discovers an unknown material" to "make an accurate determination if that … unknown material is a dangerous waste". WAC 173-303-070(3)(a) goes on to propose that this person "must begin immediately" to designate such waste. The approach to, handling of, and designation of unknown material is a safety hazard to personnel and should be done only after careful evaluation and risk assessment. Further, unknown materials are overwhelmingly likely to require sampling and analysis in order to designate them, which takes time and effort to complete. Consider revising the wording of these two requirements to allow for evaluation of unknown materials prior to beginning the designation process.
7. WAC 173-303-070(3)(a). Ecology proposes to require that the "dangerous waste designation for each solid waste must begin immediately at the point of waste generation…" This requirement, as noted under our comment on the definition of "point of generation", does not account for a waste stream that normally varies in composition as it is generated, even in ways that render it non-dangerous part of the time. Examples would include laboratory analysis using a particular instrument where the instrument drains into a satellite accumulation container. The implication of this definition is that a generator would have to designate wastes being continually accumulated in a satellite accumulation area (or CAA) to account for this variability. This would be impractical and imprecise at best. We recommend that the requirement be limited to the "place" of generation, as was adopted under the Generator Improvements Rule.
8. WAC 173-303-070(3)(c). The word "requirements" is misspelled twice in this section. Consider correcting the spelling.
9. WAC 173-303-070(3)(d)(iv). Ecology proposes to replace the word "any" with the words "one or more" when determining if a waste exhibits any dangerous waste criteria. The word substitution appears to conflict with Ecology's current waste designation guidance (see "Chemical Test Methods for Designating Dangerous Waste, Ecology Publication 97-407, December 2014, and "Designating Dangerous Waste", Ecology Publication 96-436, October 2004) which allows not designating for persistence if the waste is state toxic. If our understanding of the priority for designation is correct, consider revising this requirement to read "… determine if the waste meets the dangerous waste criteria for toxicity or, if not toxic, persistence, WAC 173-303-100."
10. WAC 173-303-070(3)(e)(ii)(C). Ecology proposes to add a statement that when knowledge is inadequate or absent to make an accurate designation, testing is required. This statement is largely redundant to existing (ii)(A), which states that knowledge can only be used when it can be "…demonstrated to be sufficient for determining whether or not it … designated accurately". The addition as (ii)(C) appears to be out of context. Consider removing this proposed addition.
11. WAC 173-303-071(3)(k)(i). Ecology proposes to narrow the exemption for PCB-containing wastes to those that contain "dielectric fluid and electric equipment containing such fluid". It

isn't clear why Ecology proposes to subject most PCB wastes to the Dangerous Waste Regulations now. This adds administrative burdens to the interim management of such wastes (e.g. labeling, weekly vs. monthly inspection, can only accumulate for 90 days vs. nine months) but does not change the final disposal of such wastes and does not appear to have any significant benefit for human health or the environment. Recognizing that the corresponding exemption in 40 CFR 261.8 only applies to dielectric fluid and electric equipment containing such fluid, Ecology should be consistent in exempting only those materials from designation as toxic (waste codes D018-D043). However, the exemption from the Dangerous Waste Regulations when the waste is state-only [existing WAC 173-303-071(3)(k)(i)(B)] should be retained whether the waste is "dielectric fluid and electric equipment containing such fluid" or another PCB waste subject to 40 CFR 761. Consider retaining this portion of the exemption as in the current DW regulations.

12. WAC 173-303-071(3)(ss)(vi). Ecology proposes to adopt only part of the Federal solvent wipers rule. Ecology does not include disposal in a municipal waste landfill or incinerator as options for disposal, as does the corresponding Federal rule. The impact of this omission is to curtail the relief provided by the Federal rule for such wipers. Under Ecology's proposal, disposable wipers must be accumulated, containerized and labeled under modestly relaxed standards, but must still be disposed of at permitted RCRA treatment or disposal facilities. Ecology has not advanced any rationale why Washington state municipal waste landfills or combustors are uniquely unsuitable for disposal of these wipers as opposed to similar facilities in other states. A possible impact of this rule is to shift the disposal burden for these wipers to neighboring states, where they will be non-regulated. We recommend Ecology consider adopting the corresponding Federal rule without the deletions noted.
13. WAC 173-303-170(2)(b)(iv): Ecology proposes to require that persons treating their dangerous waste on site comply with the generator standards for both WAC 173-303-170(b)(ii) (for medium quantity generators) and (b)(iii) (for large quantity generators). A word also appears to be missing, possibly "persons". Consider revising this paragraph to read "In addition to complying with the requirements of (b)(ii) of this subsection for medium quantity generators, or (b)(iii) of this subsection for large quantity generators, as appropriate, persons who treat their dangerous waste on site must: …"
14. WAC 173-303-171(1)(e)(ix)(B). Ecology proposes to require that small quantity generators mark containers with the words "dangerous waste" or "hazardous waste" and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology's proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, particularly in laboratory settings. As a large research institution, most of PNNL's dangerous waste is accumulated in laboratories using small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because laboratory waste streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in minimizing the quantity of dangerous waste in busy research laboratory spaces with active processes and equipment, especially for mixed waste. Accumulation containers that are not directly attached to analytical equipment are generally kept in chemical storage cabinets to meet fire code requirements. In the laboratory context, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the attached photo for an example of attempting to meet Ecology's proposed requirement for a

one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology's proposed marking size; however, this practice precludes easy inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our laboratories simply do not have sufficient storage space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in laboratories are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with the words "hazardous waste" or "dangerous waste" need to be revised in this manner. The existing Federal and state criteria to "clearly" mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size.

15. WAC 173-303-171(1)(e)(ix)(C). Ecology proposes to require that small quantity generators mark containers with "an indication of the hazards of the contents." Examples include, but are not limited to, the characteristics and criteria of the waste. This proposed rule deletes the provisions of the GIR that cite the use of Department of Transportation labeling or placarding, Occupational Safety and Health Administration hazard communication standard labels, or a chemical hazard label consistent with the National Fire Protection Association Code 704 as acceptable examples. We object to Ecology's omission of these examples. In its November 15 webinar to discuss the pre-draft regulations, Ecology representatives commented that "none of them" (DOT, OSHA, or NFPA) are adequate to meet Ecology's proposed standard for risk labeling. By deleting these examples, Ecology is in essence adopting a risk labeling system during waste accumulation and storage that directly conflicts with its own requirements [WAC 173-303-190(2)] to label waste with the appropriate DOT warning label prior to shipment. We have previously pointed out to Ecology that the word "toxic" conflicts with the DOT labeling requirement unless the waste is a DOT poison. As a result, any marking of the waste as "toxic" (or any other hazard label that conflicts with DOT labeling requirements), as is frequently required, must be removed from the accumulation container prior to shipment and replaced with the appropriate DOT label. The addition of a separate, conflicting labeling system is unduly burdensome and does not protect human health or the environment. Further, the term "is not limited to" indicates that Ecology may expect generators to provide some unspecified marking for certain types of waste. However, the proposal does not explain when such a marking would be required, or what it would consist of. The rule is thus unclear as to what type of marking is actually required and could be the subject of questions of implementation by inspectors. We strongly recommend that Ecology adopt the language of the GIR regarding marking with "an indication of the hazards of the contents" without modification.
16. WAC 173-303-171(1)(e)(ix)(C)(I). Ecology proposes to require that small quantity generators mark containers and tanks with "an indication of the hazards of the contents" and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology's proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, particularly in laboratory settings. As a large research institution, most of PNNL's dangerous waste is accumulated in laboratories using small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because laboratory waste

streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in minimizing the quantity of dangerous waste in busy research laboratory spaces with active processes and equipment, especially for mixed waste. Accumulation containers that are not directly attached to analytical equipment are generally kept in chemical storage cabinets to meet fire code requirements. In the laboratory context, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the attached photo for an example of attempting to meet Ecology's proposed requirement for a one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology's proposed marking size; however, this practice precludes easy inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our laboratories simply do not have sufficient storage space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in laboratories are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with the words "hazardous waste" or "dangerous waste" need to be revised in this manner. The existing Federal and state criteria to "clearly" mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size.

17. WAC 173-303-171(1)(e)(ix)(C)(II). Ecology proposes to require that small quantity generators mark containers and tanks with "an indication of the hazards of the contents." Such marking must be "understandable to employees, emergency response personnel, the public, and visitors to the site." Ecology's proposal to limit hazard warnings to text descriptions as the only way to achieve "understandability" unnecessarily restricts generators from using established, well-understood hazard warning systems. We believe that limiting the specific hazard warnings to text descriptions is not necessary or even beneficial. We recognize that untrained staff, visitors and the public may not fully understand symbolic hazard warnings (e.g., DOT, NFPA, and OSHA and hazard identification systems). However, text warnings such as "Ignitable", "Toxic" or "Reactive" may also provide little useful information to untrained people. The generic "Hazardous Waste" or "Dangerous Waste" statement is sufficient to warn untrained employees and the public to beware. Hazard-specific labeling is useful only to waste management employees and emergency responders, who are trained to understand DOT, NFPA and OSHA hazard identification systems. In reality, DOT and other hazard identification systems are likely to be more useful to waste management employees and emergency responders than text warnings by virtue of having more specific meanings. As an example, Ecology has suggested that "Ignitable" is an appropriate hazard warning. In fact, "Ignitable" wastes could include flammable liquids, flammable gases, flammable solids or oxidizers, or even combustible liquids -- each of which would require distinctly different approaches to emergency response. In this case the DOT labels, for example, provide far more specific and useful information than Ecology's suggested text warning. The same is certainly true of the "Reactive" hazard description. We recommend Ecology allow utilization of the labeling systems referenced in the GIR, i.e. Department of Transportation, Occupational Safety and Health Administration hazard

communication standard, or a chemical hazard label consistent with the National Fire Protection Association Code 704.

18. WAC 173-303-172(5)(a). Ecology proposes to add several indicators of when a container may not be "in good condition" and thus unsuitable for continued use. These include "severe corroding, rusting, flaking, scaling, and/or apparent structural defects". The current regulation only cites "severe rusting" and "apparent structural defects" as examples. Since these are cited as examples, it appears Ecology is attempting to broaden the basis on which an inspector may question the integrity of a container in storage. It remains the responsibility of the generator (or TSD) to determine if the container is "in good condition" regardless of the defect that may render it otherwise; the added examples appear superfluous. We recommend Ecology not adopt the added examples.
19. WAC 173-303-172(9)(a)(ii). Ecology proposes to require that medium quantity generators mark containers with the words "dangerous waste" or "hazardous waste" and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology's proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, particularly in laboratory settings. As a large research institution, most of PNNL's dangerous waste is accumulated in laboratories using small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because laboratory waste streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in minimizing the quantity of dangerous waste in busy research laboratory spaces with active processes and equipment, especially for mixed waste. Accumulation containers that are not directly attached to analytical equipment are generally kept in chemical storage cabinets to meet fire code requirements. In the laboratory context, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the attached photo for an example of attempting to meet Ecology's proposed requirement for a one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology's proposed marking size; however, this practice precludes easy inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our laboratories simply do not have sufficient storage space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in laboratories are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with the words "hazardous waste" or "dangerous waste" need to be revised in this manner. The existing Federal and state criteria to "clearly" mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size.
20. WAC 173-303-172(9)(a)(iii). Ecology proposes to require that medium quantity generators mark containers with "an indication of the hazards of the contents." Examples include, but are not limited to, the characteristics and criteria of the waste. This proposed rule deletes the provisions of the GIR that cite the use of Department of Transportation labeling or placarding,

Occupational Safety and Health Administration hazard communication standard labels, or a chemical hazard label consistent with the National Fire Protection Association Code 704 as acceptable examples. We object to Ecology's omission of these examples. In its November 15 webinar to discuss the pre-draft regulations, Ecology representatives commented that "none of them" (DOT, OSHA, or NFPA) are adequate to meet Ecology's proposed standard for risk labeling. By deleting these examples, Ecology is in essence adopting a risk labeling system during waste accumulation and storage that directly conflicts with its own requirements [WAC 173-303-190(2)] to label waste with the appropriate DOT warning label prior to shipment. We have previously pointed out to Ecology that the word "toxic" conflicts with the DOT labeling requirement unless the waste is a DOT poison. As a result, any marking of the waste as "toxic" (or any other hazard label that conflicts with DOT labeling requirements), as is frequently required, must be removed from the accumulation container prior to shipment and replaced with the appropriate DOT label. The addition of a separate, conflicting labeling system is unduly burdensome and does not protect human health or the environment. Further, the term "is not limited to" indicates that Ecology may expect generators to provide some unspecified marking for certain types of waste. However, the proposal does not explain when such a marking would be required, or what it would consist of. The rule is thus unclear as to what type of marking is actually required and could be the subject of questions of implementation by inspectors. We strongly recommend that Ecology adopt the language of the GIR regarding marking with "an indication of the hazards of the contents" without modification.

21. WAC 173-303-172(9)(a)(iii)(A). Ecology proposes to require that medium quantity generators mark containers with "an indication of the hazards of the contents" and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology's proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, particularly in laboratory settings. As a large research institution, most of PNNL's dangerous waste is accumulated in laboratories using small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because laboratory waste streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in minimizing the quantity of dangerous waste in busy research laboratory spaces with active processes and equipment, especially for mixed waste. Accumulation containers that are not directly attached to analytical equipment are generally kept in chemical storage cabinets to meet fire code requirements. In the laboratory context, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the attached photo for an example of attempting to meet Ecology's proposed requirement for a one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology's proposed marking size; however, this practice precludes easy inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our laboratories simply do not have sufficient storage space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in laboratories are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided

with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with the words "hazardous waste" or "dangerous waste" need to be revised in this manner. The existing Federal and state criteria to "clearly" mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size.

22. WAC 173-303-172(9)(a)(iii)(B). Ecology proposes to require that medium quantity generators mark containers with "an indication of the hazards of the contents." Such marking must be "understandable to employees, emergency response personnel, the public, and visitors to the site." Ecology's proposal to limit hazard warnings to text descriptions as the only way to achieve "understandability" unnecessarily restricts generators from using established, well-understood hazard warning systems. We believe that limiting the specific hazard warnings to text descriptions is not necessary or even beneficial. We recognize that untrained staff, visitors and the public may not fully understand symbolic hazard warnings (e.g., DOT, NFPA, and OSHA and hazard identification systems). However, text warnings such as "Ignitable", "Toxic" or "Reactive" may also provide little useful information to untrained people. The generic "Hazardous Waste" or "Dangerous Waste" statement is sufficient to warn untrained employees and the public to beware. Hazard-specific labeling is useful only to waste management employees and emergency responders, who are trained to understand DOT, NFPA and OSHA hazard identification systems. In reality, DOT and other hazard identification systems are likely to be more useful to waste management employees and emergency responders than text warnings by virtue of having more specific meanings. As an example, Ecology has suggested that "Ignitable" is an appropriate hazard warning. In fact, "Ignitable" wastes could include flammable liquids, flammable gases, flammable solids or oxidizers, or even combustible liquids -- each of which would require distinctly different approaches to emergency response. In this case the DOT labels, for example, provide far more specific and useful information than Ecology's suggested text warning. The same is certainly true of the "Reactive" hazard description. We recommend Ecology allow utilization of the labeling systems referenced in the GIR, i.e. Department of Transportation, Occupational Safety and Health Administration hazard communication standard, or a chemical hazard label consistent with the National Fire Protection Association Code 704.
23. WAC 173-303-172(13). Ecology proposes to add an MQG requirement to "…inspect the facility…" similar to that required for large-quantity generators and TSD facilities. This requirement does not appear in the corresponding GIR requirements of 40 CFR 262.16. Imposition of a requirement to prepare an inspection plan, when weekly inspection of MQG CAAs is already required by proposed WAC 173-303-172(5)(d) and testing and maintenance of equipment is already required by proposed WAC 173-303-172(11)(c), seems unnecessary for MQGs. Ecology has not explained why a written inspection plan is necessary for MQGs to protect human health or the environment. We recommend this section be deleted.
24. WAC 173-303-173(3)(f)(i)(B). Ecology proposes to require that episodic generators mark containers with the words "episodic dangerous waste" or "episodic hazardous waste" and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology's proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, particularly in laboratory settings but also during an episodic event including a variety of wastes being aggregated simultaneously such as a maintenance campaign. Episodic dangerous waste could be accumulated in a variety of small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because

laboratory waste streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in minimizing the quantity of dangerous waste in busy research laboratory spaces with active processes and equipment, especially for mixed waste. Accumulation containers that are not directly attached to analytical equipment are generally kept in chemical storage cabinets to meet fire code requirements. In the laboratory context, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the attached photo for an example of attempting to meet Ecology's proposed requirement for a one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology's proposed marking size; however, this practice precludes easy inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our laboratories simply do not have sufficient storage space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in laboratories are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with the words "hazardous waste" or "dangerous waste" need to be revised in this manner. The existing Federal and state criteria to "clearly" mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size.

25. WAC 173-303-173(3)(f)(i)(C). Ecology proposes to require that episodic generators mark containers with "an indication of the hazards of the contents." Examples include, but are not limited to, the characteristics and criteria of the waste. This proposed rule deletes the provisions of the GIR that cite the use of Department of Transportation labeling or placarding, Occupational Safety and Health Administration hazard communication standard labels, or a chemical hazard label consistent with the National Fire Protection Association Code 704 as acceptable examples. We object to Ecology's omission of these examples. In its November 15 webinar to discuss the pre-draft regulations, Ecology representatives commented that "none of them" (DOT, OSHA, or NFPA) are adequate to meet Ecology's proposed standard for risk labeling. By deleting these examples, Ecology is in essence adopting a risk labeling system during waste accumulation and storage that directly conflicts with its own requirements [WAC 173-303-190(2)] to label waste with the appropriate DOT warning label prior to shipment. We have previously pointed out to Ecology that the word "toxic" conflicts with the DOT labeling requirement unless the waste is a DOT poison. As a result, any marking of the waste as "toxic" (or any other hazard label that conflicts with DOT labeling requirements), as is frequently required, must be removed from the accumulation container prior to shipment and replaced with the appropriate DOT label. The addition of a separate, conflicting labeling system is unduly burdensome and does not protect human health or the environment. Further, the term "is not limited to" indicates that Ecology may expect generators to provide some unspecified marking for certain types of waste. However, the proposal does not explain when such a marking would be required, or what it would consist of. The rule is thus unclear as to what type of marking is actually required and could be the subject of questions of implementation by inspectors. We strongly recommend that Ecology adopt the language of the GIR regarding marking with "an indication of the hazards of the contents" without modification.

26. WAC 173-303-173(3)(f)(i)(C)(I). Ecology proposes to require that episodic generators mark containers with "an indication of the hazards of the contents" and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology's proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, including during episodic generation at a MQG. A variety of episodic waste could be generated and accumulated using small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because laboratory waste streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in minimizing the quantity of dangerous waste in spaces with active processes and equipment, especially for mixed waste. Accumulation containers that are not directly attached to analytical equipment are generally kept in chemical storage cabinets to meet fire code requirements. In the laboratory context, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the attached photo for an example of attempting to meet Ecology's proposed requirement for a one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology's proposed marking size; however, this practice precludes easy inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our laboratories simply do not have sufficient storage space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in laboratories are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with the words "hazardous waste" or "dangerous waste" need to be revised in this manner. The existing Federal and state criteria to "clearly" mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size.
27. WAC 173-303-173(3)(f)(i)(C)(II). Ecology proposes to require that episodic generators mark containers with "an indication of the hazards of the contents." Such marking must be "understandable to employees, emergency response personnel, the public, and visitors to the site." Ecology's proposal to limit hazard warnings to text descriptions as the only way to achieve "understandability" unnecessarily restricts generators from using established, well-understood hazard warning systems. We believe that limiting the specific hazard warnings to text descriptions is not necessary or even beneficial. We recognize that untrained staff, visitors and the public may not fully understand symbolic hazard warnings (e.g., DOT, NFPA, and OSHA and hazard identification systems). However, text warnings such as "Ignitable", "Toxic" or "Reactive" may also provide little useful information to untrained people. The generic "Hazardous Waste" or "Dangerous Waste" statement is sufficient to warn untrained employees and the public to beware. Hazard-specific labeling is useful only to waste management employees and emergency responders, who are trained to understand DOT, NFPA and OSHA hazard identification systems. In reality, DOT and other hazard identification systems are likely to be more useful to waste management employees and emergency responders than text warnings by virtue of having more specific meanings. As an example, Ecology has suggested

that “Ignitable” is an appropriate hazard warning. In fact, “Ignitable” wastes could include flammable liquids, flammable gases, flammable solids or oxidizers, or even combustible liquids -- each of which would require distinctly different approaches to emergency response. In this case the DOT labels, for example, provide far more specific and useful information than Ecology’s suggested text warning. The same is certainly true of the “Reactive” hazard description. We recommend Ecology allow utilization of the labeling systems referenced in the GIR, i.e. Department of Transportation, Occupational Safety and Health Administration hazard communication standard, or a chemical hazard label consistent with the National Fire Protection Association Code 704.

28. WAC 173-303-174(1)(a). Ecology proposes to add several indicators of when a container may not be “in good condition” and thus unsuitable for continued use. These include “severe corroding, rusting, flaking, scaling, and/or apparent structural defects”. The current regulation only cites “severe rusting” and “apparent structural defects” as examples. Since these are cited as examples, it appears Ecology is attempting to broaden the basis on which an inspector may question the integrity of a container in storage. It remains the responsibility of the generator (or TSD) to determine if the container is “in good condition” regardless of the defect that may render it otherwise; the added examples appear superfluous. We recommend Ecology not adopt the added examples.
29. WAC 173-303-174(1)(e)(iii). Ecology proposes to add a requirement to separate containers of incompatible materials in a satellite accumulation area, or protect them “by means of a dike, berm, wall, or other device. Containment systems for incompatible wastes must be separate.” This requirement is impractical for satellite accumulation areas, which are generally limited in both size and capacity. Use of dikes, berms, or walls in a SAA is generally not feasible. Further, the draft rule implies that secondary containment is required for SAAs by saying that “containment systems…must be separate.” Other portions of WAC 173-303-174 do not make reference to a requirement for containment systems in SAAs, and such a requirement does not appear in the GIR. We recommend that the simple language of the GIR be adopted here, viz., “…must be separated from the other materials or protected from them by any practical means.”
30. WAC 173-303-174(1)(f)(i). Ecology proposes to require that satellite area containers be marked with the words “dangerous waste” or “hazardous waste” and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology’s proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, particularly in laboratory settings. As a large research institution, most of PNNL’s dangerous waste is accumulated in laboratories using small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because laboratory waste streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in minimizing the quantity of dangerous waste in busy research laboratory spaces with active processes and equipment, especially for mixed waste. Accumulation containers that are not directly attached to analytical equipment are generally kept in chemical storage cabinets to meet fire code requirements. In the laboratory context, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the attached photo for an example of attempting to meet Ecology’s proposed requirement for a one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology’s proposed marking size; however, this practice precludes easy

inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our laboratories simply do not have sufficient storage space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in laboratories are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with the words "hazardous waste" or "dangerous waste" need to be revised in this manner. The existing Federal and state criteria to "clearly" mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size.

31. WAC 173-303-174(1)(f)(ii). Ecology proposes to require that satellite area containers be marked with "an indication of the hazards of the contents." Examples include, but are not limited to, the characteristics and criteria of the waste. This proposed rule deletes the provisions of the GIR that cite the use of Department of Transportation labeling or placarding, Occupational Safety and Health Administration hazard communication standard labels, or a chemical hazard label consistent with the National Fire Protection Association Code 704 as acceptable examples. We object to Ecology's omission of these examples. In its November 15 webinar to discuss the pre-draft regulations, Ecology representatives commented that "none of them" (DOT, OSHA, or NFPA) are adequate to meet Ecology's proposed standard for risk labeling. By deleting these examples, Ecology is in essence adopting a risk labeling system during waste accumulation and storage that directly conflicts with its own requirements [WAC 173-303-190(2)] to label waste with the appropriate DOT warning label prior to shipment. We have previously pointed out to Ecology that the word "toxic" conflicts with the DOT labeling requirement unless the waste is a DOT poison. As a result, any marking of the waste as "toxic" (or any other hazard label that conflicts with DOT labeling requirements), as is frequently required, must be removed from the accumulation container prior to shipment and replaced with the appropriate DOT label. The addition of a separate, conflicting labeling system is unduly burdensome and does not protect human health or the environment. Further, the term "is not limited to" indicates that Ecology may expect generators to provide some unspecified marking for certain types of waste. However, the proposal does not explain when such a marking would be required, or what it would consist of. The rule is thus unclear as to what type of marking is actually required and could be the subject of questions of implementation by inspectors. We strongly recommend that Ecology adopt the language of the GIR regarding marking with "an indication of the hazards of the contents" without modification.
32. WAC 173-303-174(1)(f)(ii)(D). Ecology proposes to require that satellite area containers be marked with "an indication of the hazards of the contents" and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology's proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, particularly in laboratory settings. As a large research institution, most of PNNL's dangerous waste is accumulated in laboratories using small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because laboratory waste streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in

minimizing the quantity of dangerous waste in busy research laboratory spaces with active processes and equipment, especially for mixed waste. Accumulation containers that are not directly attached to analytical equipment are generally kept in chemical storage cabinets to meet fire code requirements. In the laboratory context, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the attached photo for an example of attempting to meet Ecology's proposed requirement for a one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology's proposed marking size; however, this practice precludes easy inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our laboratories simply do not have sufficient storage space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in laboratories are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with the words "hazardous waste" or "dangerous waste" need to be revised in this manner. The existing Federal and state criteria to "clearly" mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size. Note: This paragraph should probably be designated (A), not (D).

33. WAC 173-303-174(1)(f)(ii)(E). Ecology proposes to require that satellite area containers be marked with "an indication of the hazards of the contents." Such marking must be "understandable to employees, emergency response personnel, the public, and visitors to the site." Ecology's proposal to limit hazard warnings to text descriptions as the only way to achieve "understandability" unnecessarily restricts generators from using established, well-understood hazard warning systems. We believe that limiting the specific hazard warnings to text descriptions is not necessary or even beneficial. We recognize that untrained staff, visitors and the public may not fully understand symbolic hazard warnings (e.g., DOT, NFPA, and OSHA and hazard identification systems). However, text warnings such as "Ignitable", "Toxic" or "Reactive" may also provide little useful information to untrained people. The generic "Hazardous Waste" or "Dangerous Waste" statement is sufficient to warn untrained employees and the public to beware. Hazard-specific labeling is useful only to waste management employees and emergency responders, who are trained to understand DOT, NFPA and OSHA hazard identification systems. In reality, DOT and other hazard identification systems are likely to be more useful to waste management employees and emergency responders than text warnings by virtue of having more specific meanings. As an example, Ecology has suggested that "Ignitable" is an appropriate hazard warning. In fact, "Ignitable" wastes could include flammable liquids, flammable gases, flammable solids or oxidizers, or even combustible liquids -- each of which would require distinctly different approaches to emergency response. In this case the DOT labels, for example, provide far more specific and useful information than Ecology's suggested text warning. The same is certainly true of the "Reactive" hazard description. We recommend Ecology allow utilization of the labeling systems referenced in the GIR, i.e. Department of Transportation, Occupational Safety and Health Administration hazard communication standard, or a chemical hazard label consistent with the National Fire Protection Association Code 704. Note: This paragraph should probably be designated (B), not (E).

34. WAC 173-303-190(3)(b). Ecology proposes to require the marking of dangerous waste number(s) on each package of dangerous waste. As a maximum number of waste codes is not specified, clarification that at least the first six applicable waste codes should appear on the marking would be helpful. See EPA's comment response document to the GIR, p. 466, where this EPA policy is reaffirmed. To require each waste code to be written on the label, which is typically 6"x6", would likely be difficult when a large number of waste codes apply to the contents.
35. WAC 173-303-190(9). Ecology proposes to impose state-only LDRs found at WAC 173-303-140(4)(b) on liquids being disposed of. Imposition of state-only LDRs on waste not destined for land disposal in Washington State is not the intent of the state-only LDRs. Consider substituting the requirements of 40 CFR 268 (incorporated by reference at WAC 173-303-140(2)) for this requirement, or clarify the applicability, e.g. "Prior to disposal in the state of Washington, liquids must meet additional requirements of WAC 173-303-140(4)(b)."
36. WAC 173-303-200(1). This section is proposed to be titled "Off site shipments" [sic]; however, it (correctly) allows for the placement of waste in a permitted on-site facility or treated or recycled on-site. Consider revising the title to "Shipments" or some such.
37. WAC 173-303-200(2)(b)(iii). Ecology proposes to start the 90-day accumulation period when "The generator exceeds its satellite accumulation limits prescribed in WAC 173-303-174(1)." The wording implies that any SAA operated by the generator that exceeds the quantity limits triggers the 90-day accumulation period for all waste being accumulated by the generator. Since a generator may have numerous satellite accumulation areas, the 90-day accumulation period should apply when an individual SAA has reached the satellite accumulation limits. Consider rewording this paragraph to clarify the applicability to the excess accumulation in an individual SAA, for example: "The quantity of dangerous waste being accumulated in a satellite accumulation area exceeds the limits prescribed in WAC 173-303-174(1)."
38. WAC 173-303-200(3)(a). Ecology proposes to add several indicators of when a container may not be "in good condition" and thus unsuitable for continued use. These include "severe corroding, rusting, flaking, scaling, and/or apparent structural defects". The current regulation only cites "severe rusting" and "apparent structural defects" as examples. Since these are cited as examples, it appears Ecology is attempting to broaden the basis on which an inspector may question the integrity of a container in storage. It remains the responsibility of the generator (or TSD) to determine if the container is "in good condition" regardless of the defect that may render it otherwise; the added examples appear superfluous. We recommend Ecology not adopt the added examples.
39. WAC 173-303-200(3)(c)(iii). Ecology proposes to add the criterion "…and allow for complete inspection of each container" to the definition of aisle space. The criterion of "complete inspection" is unclear and arbitrary. For instance, if four drums are placed on a pallet with sides touching, are they positioned in such a way to allow "complete inspection"? If drums are placed on the floor or in a secondary containment device so that the underside of the drum cannot be readily observed, does that placement impede "complete inspection"? When Ecology first adopted the thirty-inch aisle space requirement in 1991, it stated the reason was "primarily for the safety of departmental inspectors and to allow access to personnel and equipment to dangerous waste storage and accumulation areas."[1] "Complete inspection" was not cited as a purpose for aisle space. The proposed definition muddles the requirement for aisle space and the requirement to look for "leaking containers and for deterioration of containers" as given in

[1] Ecology, "Responsiveness Summary: Amendments to the Dangerous Waste Regulations", 2/5/1991, p. 29, response 65.

proposed WAC 173-303-200(3)(d). Ecology can evaluate the adequacy of container inspections (e.g. when a two-container-wide row is adjacent to a wall) without adding vague criteria for aisle space. Consider deleting the word "complete" from the proposed paragraph.

40. WAC 173-303-200(3)(e). Ecology proposes to require that "the central accumulation area(s) include secondary containment in accordance with WAC 173-303-630(7)." This implies that containers not containing free liquids (e.g. used sorbents, dry solids, and lab packs filled with absorbent material) require secondary containment. Consider rewording this requirement, e.g. "…the department requires that the central accumulation area(s) comply with the secondary containment requirements of WAC 173-303-630(7)."
41. WAC 173-303-200(7)(a)(ii). Ecology proposes to require that CAA containers be marked with the words "dangerous waste" or "hazardous waste" and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology's proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, particularly in laboratory settings. As a large research institution, most of PNNL's dangerous waste is accumulated in laboratories using small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because laboratory waste streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in minimizing the quantity of dangerous waste in busy research laboratory spaces with active processes and equipment, especially for mixed waste. When transferred to CAAs, these small containers are generally kept in chemical storage cabinets to meet fire code requirements pending being included in a "lab pack" container. In PNNL's context, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the attached photo for an example of attempting to meet Ecology's proposed requirement for a one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology's proposed marking size; however, this practice precludes easy inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our laboratories and CAAs do not have sufficient storage space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in laboratories and CAAs are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with the words "hazardous waste" or "dangerous waste" need to be revised in this manner. The existing Federal and state criteria to "clearly" mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size.
42. WAC 173-303-200(7)(a)(iii). Ecology proposes to require that CAA containers be marked with "an indication of the hazards of the contents." Examples include, but are not limited to, the characteristics and criteria of the waste. This proposed rule deletes the provisions of the GIR that cite the use of Department of Transportation labeling or placarding, Occupational Safety and Health Administration hazard communication standard labels, or a chemical hazard label consistent with the National Fire Protection Association Code 704 as acceptable examples. We

object to Ecology's omission of these examples. In its November 15 webinar to discuss the pre-draft regulations, Ecology representatives commented that "none of them" (DOT, OSHA, or NFPA) are adequate to meet Ecology's proposed standard for risk labeling. By deleting these examples, Ecology is in essence adopting a risk labeling system during waste accumulation and storage that directly conflicts with its own requirements [WAC 173-303-190(2)] to label waste with the appropriate DOT warning label prior to shipment. We have previously pointed out to Ecology that the word "toxic" conflicts with the DOT labeling requirement unless the waste is a DOT poison. As a result, any marking of the waste as "toxic" (or any other hazard label that conflicts with DOT labeling requirements), as is frequently required, must be removed from the accumulation container prior to shipment and replaced with the appropriate DOT label. The addition of a separate, conflicting labeling system is unduly burdensome and does not protect human health or the environment. Further, the term "is not limited to" indicates that Ecology may expect generators to provide some unspecified marking for certain types of waste. However, the proposal does not explain when such a marking would be required, or what it would consist of. The rule is thus unclear as to what type of marking is actually required and could be the subject of questions of implementation by inspectors. We strongly recommend that Ecology adopt the language of the GIR regarding marking with "an indication of the hazards of the contents" without modification.

43. WAC 173-303-200(7)(a)(iii)(A). Ecology proposes to require that CAA containers be marked with "an indication of the hazards of the contents" and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology's proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, particularly in laboratory settings. As a large research institution, most of PNNL's dangerous waste is accumulated in laboratories using small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because laboratory waste streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in minimizing the quantity of dangerous waste in busy research laboratory spaces with active processes and equipment, especially for mixed waste. When transferred to CAAs, these small containers are generally kept in chemical storage cabinets to meet fire code requirements pending being included in a "lab pack" container. In PNNL's context, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the attached photo for an example of attempting to meet Ecology's proposed requirement for a one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology's proposed marking size; however, this practice precludes easy inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our laboratories and CAAs do not have sufficient storage space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in laboratories and CAAs are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with

the words “hazardous waste” or “dangerous waste” need to be revised in this manner. The existing Federal and state criteria to “clearly” mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size.

44. WAC 173-303-200(7)(a)(iii)(B). Ecology proposes to require that CAA containers be marked with “an indication of the hazards of the contents.” Such marking must be “understandable to employees, emergency response personnel, the public, and visitors to the site.” Ecology’s proposal to limit hazard warnings to text descriptions as the only way to achieve “understandability” unnecessarily restricts generators from using established, well-understood hazard warning systems. We believe that limiting the specific hazard warnings to text descriptions is not necessary or even beneficial. We recognize that untrained staff, visitors and the public may not fully understand symbolic hazard warnings (e.g., DOT, NFPA, and OSHA and hazard identification systems). However, text warnings such as “Ignitable”, “Toxic” or “Reactive” may also provide little useful information to untrained people. The generic “Hazardous Waste” or “Dangerous Waste” statement is sufficient to warn untrained employees and the public to beware. Hazard-specific labeling is useful only to waste management employees and emergency responders, who are trained to understand DOT, NFPA and OSHA hazard identification systems. In reality, DOT and other hazard identification systems are likely to be more useful to waste management employees and emergency responders than text warnings by virtue of having more specific meanings. As an example, Ecology has suggested that “Ignitable” is an appropriate hazard warning. In fact, “Ignitable” wastes could include flammable liquids, flammable gases, flammable solids or oxidizers, or even combustible liquids -- each of which would require distinctly different approaches to emergency response. In this case the DOT labels, for example, provide far more specific and useful information than Ecology’s suggested text warning. The same is certainly true of the “Reactive” hazard description. We recommend Ecology allow utilization of the labeling systems referenced in the GIR, i.e. Department of Transportation, Occupational Safety and Health Administration hazard communication standard, or a chemical hazard label consistent with the National Fire Protection Association Code 704.
45. WAC 173-303-200(7)(b)(ii). Ecology proposes to require that accumulation tanks be marked with “an indication of the hazards of the contents.” Examples include, but are not limited to, the characteristics and criteria of the waste. This proposed rule deletes the provisions of the GIR that cite the use of Department of Transportation labeling or placarding, Occupational Safety and Health Administration hazard communication standard labels, or a chemical hazard label consistent with the National Fire Protection Association Code 704 as acceptable examples. We object to Ecology’s omission of these examples. In its November 15 webinar to discuss the pre-draft regulations, Ecology representatives commented that “none of them” (DOT, OSHA, or NFPA) are adequate to meet Ecology’s proposed standard for risk labeling. By deleting these examples, Ecology is in essence adopting a risk labeling system during waste accumulation and storage that directly conflicts with its own requirements [WAC 173-303-190(2)] to label waste with the appropriate DOT warning label prior to shipment. We have previously pointed out to Ecology that the word “toxic” conflicts with the DOT labeling requirement unless the waste is a DOT poison. As a result, any marking of the waste as “toxic” (or any other hazard label that conflicts with DOT labeling requirements), as is frequently required, must be removed from the accumulation container prior to shipment and replaced with the appropriate DOT label. The addition of a separate, conflicting labeling system is unduly burdensome and does not protect human health or the environment. Further, the term “is not limited to” indicates that Ecology may expect generators to provide some unspecified marking for certain types of waste. However, the proposal does not explain when such a marking would be required, or what it

would consist of. The rule is thus unclear as to what type of marking is actually required and could be the subject of questions of implementation by inspectors. We strongly recommend that Ecology adopt the language of the GIR regarding marking with "an indication of the hazards of the contents" without modification.

46. WAC 173-303-200(7)(b)(ii)(B). Ecology proposes to require that accumulation tanks be marked with "an indication of the hazards of the contents." Such marking must be "understandable to employees, emergency response personnel, the public, and visitors to the site." Ecology's proposal to limit hazard warnings to text descriptions as the only way to achieve "understandability" unnecessarily restricts generators from using established, well-understood hazard warning systems. We believe that limiting the specific hazard warnings to text descriptions is not necessary or even beneficial. We recognize that untrained staff, visitors and the public may not fully understand symbolic hazard warnings (e.g., DOT, NFPA, and OSHA and hazard identification systems). However, text warnings such as "Ignitable", "Toxic" or "Reactive" may also provide little useful information to untrained people. The generic "Hazardous Waste" or "Dangerous Waste" statement is sufficient to warn untrained employees and the public to beware. Hazard-specific labeling is useful only to waste management employees and emergency responders, who are trained to understand DOT, NFPA and OSHA hazard identification systems. In reality, DOT and other hazard identification systems are likely to be more useful to waste management employees and emergency responders than text warnings by virtue of having more specific meanings. As an example, Ecology has suggested that "Ignitable" is an appropriate hazard warning. In fact, "Ignitable" wastes could include flammable liquids, flammable gases, flammable solids or oxidizers, or even combustible liquids -- each of which would require distinctly different approaches to emergency response. In this case the DOT labels, for example, provide far more specific and useful information than Ecology's suggested text warning. The same is certainly true of the "Reactive" hazard description. We recommend Ecology allow utilization of the labeling systems referenced in the GIR, i.e. Department of Transportation, Occupational Safety and Health Administration hazard communication standard, or a chemical hazard label consistent with the National Fire Protection Association Code 704.
47. WAC 173-303-200(9)(a). Ecology's proposed rule regarding training follows the logic of the GIR. It also contains one of the errors in the GIR, i.e. using the term "facility personnel" to describe the people requiring training. Since the term "facility personnel" is specifically defined in WAC 173-303-040 as personnel who "work at, or oversee the operations of, a dangerous waste facility…", a generator may not have any "facility personnel" to train unless they operate a dangerous waste facility as well as one or more CAAs. Consider clarifying the applicability of the training requirements to persons that are responsible for the operation of CAAs.
48. WAC 173-303-200(12)(c)(ii)(A): Ecology's proposed rule setting the standards to be met for closure of a CAA quotes WAC 173-303-610(2)(b)(i), specifying that "primarily, these will be…calculated according to MTCA Method B, although MTCA Method A may be used as appropriate…" While this is reflective of the existing rule, it is still inappropriate for Ecology to suggest that unrestricted use standards (Method A and Method B) should be used to close individual CAAs in an industrial operation, which may (due to historic use, surrounding land uses, and/or zoning restrictions) be properly closed according to the Method C (industrial) standards. Consider removing the reference to Methods A and B.
49. WAC 173-303-200(12)(c)(ii)(B): Ecology proposes to set closure standards for structures, equipment, bases, liners, etc. "on a case-by-case basis…" The closure of CAAs, unlike the closure of TSD facilities from which this reference is drawn, is likely to be much more frequent and will create a burden for both Ecology and the regulated community. In Ecology's case, it will need to

review the conditions at each CAA being closed. For the regulated community, the closure of the CAA will be delayed by Ecology's site-specific standard-setting activity. Consider referencing the "clean debris" standards of 40 CFR 268.45, incorporated by reference at WAC 173-303-140(2) and utilized in Ecology's existing Clean Closure Guidance, as a standard to be followed not requiring Ecology case-by-case approval.

50. WAC 173-303-201(9)(a). Ecology's draft requirement contains the statement that when modifications are made to non-dangerous waste provisions in an integrated contingency plan, "the changes do not trigger the need for a dangerous waste permit modification." This reference (copied from WAC 173-303-350(2) standards for TSD facilities) is superfluous here, as permits are not required for generator accumulation. Consider deleting the last sentence of this section.
51. WAC 173-303-201(9)(b)(iv). Ecology's draft requirement contains the statement that when new facilities are established, "this list [of emergency coordinators] may be provided at the time of facility certification…rather than as part of the permit application." This sentence (copied from WAC 173-303-350(3)(d) standards for TSD facilities) is superfluous here, as permits are not required for generator accumulation. Consider deleting this sentence.
52. WAC 173-303-350(1). Ecology proposes to expand the scope of the contingency plan to "…any event or circumstance…" and removes the term "emergency". This proposed change appears to broaden the requirements for a contingency plan well beyond the scope envisioned in the comparable Federal rule, i.e. "fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water." Since the terms "event" and "circumstance" are not defined, the proper scope of a contingency plan is vague and subject to interpretation by individual field inspectors. The scope given in this section should be consistent with the scope anticipated by the requirements in proposed WAC 173-303-350(2), i.e. "emergencies or any sudden or nonsudden releases which threaten human health and the environment." The conflict causes confusion.
53. WAC 173-303-360(2). Ecology proposes to broaden the "emergency procedures" of this section to be implemented whenever "any event or circumstance identified in WAC 173-303-350" occurs. This proposed requirement conflicts with proposed WAC 173-303-350(2) as to the scope of the contingency plan and makes it unclear as to when emergency procedures are to be used to respond to non-emergency situations, as proposed WAC 173-303-350(1) deletes the reference to "emergencies". Emergency procedures should be utilized only in the event of a true emergency. The added vagueness proposed here does not support the timely, skillful response to an emergency, only the reference to some sort of decision tree (perhaps) that determines the proper scope and timing of a response. Consider deleting the proposed addition.
54. WAC 173-303-395(6). Ecology proposes to require that containers be marked with "an indication of the hazards of the contents." Examples include, but are not limited to, the characteristics and criteria of the waste. This proposed rule deletes the provisions of the GIR that cite the use of Department of Transportation labeling or placarding, Occupational Safety and Health Administration hazard communication standard labels, or a chemical hazard label consistent with the National Fire Protection Association Code 704 as acceptable examples. We object to Ecology's omission of these examples. In its November 15 webinar to discuss the pre-draft regulations, Ecology representatives commented that "none of them" (DOT, OSHA, or NFPA) are adequate to meet Ecology's proposed standard for risk labeling. By deleting these examples, Ecology is in essence adopting a risk labeling system during waste accumulation and storage that directly conflicts with its own requirements [WAC 173-303-190(2)] to label waste with the appropriate DOT warning label prior to shipment. We have previously pointed out to

Ecology that the word "toxic" conflicts with the DOT labeling requirement unless the waste is a DOT poison. As a result, any marking of the waste as "toxic" (or any other hazard label that conflicts with DOT labeling requirements), as is frequently required, must be removed from the accumulation container prior to shipment and replaced with the appropriate DOT label. The addition of a separate, conflicting labeling system is unduly burdensome and does not protect human health or the environment. Further, the term "is not limited to" indicates that Ecology may expect generators to provide some unspecified marking for certain types of waste. However, the proposal does not explain when such a marking would be required, or what it would consist of. The rule is thus unclear as to what type of marking is actually required and could be the subject of questions of implementation by inspectors. We strongly recommend that Ecology adopt the language of the GIR regarding marking with "an indication of the hazards of the contents" without modification.

55. WAC 173-303-395(6). Ecology proposes to require that containers be marked with "an indication of the hazards of the contents" and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology's proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, particularly in laboratory settings. As a large research institution, most of PNNL's dangerous waste is accumulated in laboratories using small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because laboratory waste streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in minimizing the quantity of dangerous waste in busy research laboratory spaces with active processes and equipment, especially for mixed waste. During accumulation and storage, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the attached photo for an example of attempting to meet Ecology's proposed requirement for a one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology's proposed marking size; however, this practice precludes easy inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our accumulation and storage areas do not have sufficient space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in accumulation and storage are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with the words "hazardous waste" or "dangerous waste" need to be revised in this manner. The existing Federal and state criteria to "clearly" mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size.
56. WAC 173-303-395(6). Ecology proposes to require that containers be marked with "an indication of the hazards of the contents." Such marking must be "understandable to employees, emergency response personnel, the public, and visitors to the site." Ecology's proposal to limit hazard warnings to text descriptions as the only way to achieve "understandability" unnecessarily restricts generators from using established, well-understood

hazard warning systems. We believe that limiting the specific hazard warnings to text descriptions is not necessary or even beneficial. We recognize that untrained staff, visitors and the public may not fully understand symbolic hazard warnings (e.g., DOT, NFPA, and OSHA and hazard identification systems). However, text warnings such as "Ignitable", "Toxic" or "Reactive" may also provide little useful information to untrained people. The generic "Hazardous Waste" or "Dangerous Waste" statement is sufficient to warn untrained employees and the public to beware. Hazard-specific labeling is useful only to waste management employees and emergency responders, who are trained to understand DOT, NFPA and OSHA hazard identification systems. In reality, DOT and other hazard identification systems are likely to be more useful to waste management employees and emergency responders than text warnings by virtue of having more specific meanings. As an example, Ecology has suggested that "Ignitable" is an appropriate hazard warning. In fact, "Ignitable" wastes could include flammable liquids, flammable gases, flammable solids or oxidizers, or even combustible liquids -- each of which would require distinctly different approaches to emergency response. In this case the DOT labels, for example, provide far more specific and useful information than Ecology's suggested text warning. The same is certainly true of the "Reactive" hazard description. We recommend Ecology allow utilization of the labeling systems referenced in the GIR, i.e. Department of Transportation, Occupational Safety and Health Administration hazard communication standard, or a chemical hazard label consistent with the National Fire Protection Association Code 704.

57. WAC 173-303-400(2)(c)(vi). Ecology proposes to apply the accumulation standards for large quantity generators or medium quantity generators to generators adding absorbents to waste at the time the waste is first placed into a new container. This is not entirely consistent with the GIR, which allows compliance with the "applicable conditions for exemption" for satellite accumulation and very small quantity generator requirements as well as those for medium and large quantity generators. There is no apparent reason why Ecology should impose the entire suite of medium or large quantity generator requirements on addition of sorbents during satellite accumulation or on small quantity generators. Consider revising this section to be more consistent with the GIR, e.g. "…and the generator complies with the applicable conditions for exemption in WAC 173-303-171, 173-303-172, 173-303-173, 173-303-174, 173-303-200 through -201, or 173-303-235, and with 173-303-395(1)(a) and (b)."
58. WAC 173-303-400(2)(c)(vii). Ecology proposes to apply the accumulation standards for large quantity generators or medium quantity generators to generators compacting or sorting waste in containers. This is not entirely consistent with the GIR, which allows compliance with the "applicable conditions for exemption" for satellite accumulation and small quantity generator requirements as well as those for medium and large quantity generators. There is no apparent reason why Ecology should impose the entire suite of medium or large quantity generator requirements on compaction or sorting during satellite accumulation or on very small quantity generators. Consider revising this section to be more consistent with the GIR, e.g. "…and the generator complies with the applicable conditions for exemption in WAC 173-303-171, 173-303-172, 173-303-173, 173-303-174, 173-303-200 through -201, or 173-303-235, and with 173-303-395(1)(a) and (b)."
59. WAC 173-303-600(3)(d). Ecology proposes to list meeting the conditions for exemption for small quantity, medium quantity, satellite, and large quantity accumulation as exempt from the need to acquire a final status permit, which is appropriate. However, Ecology uses the word "and" in this list, then attempts to clarify using the term "respectively". This is not adequately clear as to what conditions must be met to be exempt. Consider using the term "or" as is used

in the GIR, e.g., "A generator accumulating waste on site in compliance with WAC 173-303-171, 173-303-172, 173-303-174, or 173-303-200 through 173-303-201, as appropriate."

60. WAC 173-303-600(3)(k). Ecology proposes to apply the accumulation standards for large quantity generators or medium quantity generators to generators adding absorbents to waste at the time the waste is first placed into a new container. This is not entirely consistent with the GIR, which allows compliance with the "applicable conditions for exemption" for satellite accumulation and very small quantity generator requirements as well as those for medium and large quantity generators. There is no apparent reason why Ecology should impose the entire suite of medium or large quantity generator requirements on addition of sorbents during satellite accumulation or on small quantity generators. Consider revising this section to be more consistent with the GIR, e.g. "…and the generator complies with the applicable conditions for exemption in WAC 173-303-171, 173-303-172, 173-303-173, 173-303-174, 173-303-200 through -201, or 173-303-235, and with 173-303-395(1)(a) and (b)."
61. WAC 173-303-600(3)(l). Ecology proposes to apply the accumulation standards for large quantity generators or medium quantity generators to generators compacting or sorting waste in containers. This is not entirely consistent with the GIR, which allows compliance with the "applicable conditions for exemption" for satellite accumulation and small quantity generator requirements as well as those for medium and large quantity generators. There is no apparent reason why Ecology should impose the entire suite of medium or large quantity generator requirements on compaction or sorting during satellite accumulation or on very small quantity generators. Consider revising this section to be more consistent with the GIR, e.g. "…and the generator complies with the applicable conditions for exemption in WAC 173-303-171, 173-303-172, 173-303-173, 173-303-174, 173-303-200 through -201, or 173-303-235, and with 173-303-395(1)(a) and (b)."
62. WAC 173-303-630(2). Ecology proposes to add several indicators of when a container may not be "in good condition" and thus unsuitable for continued use. These include "severe corroding, rusting, flaking, scaling, and/or apparent structural defects". The current regulation only cites "severe rusting" and "apparent structural defects" as examples. Since these are cited as examples, it appears Ecology is attempting to broaden the basis on which an inspector may question the integrity of a container in storage. It remains the responsibility of the generator (or TSD) to determine if the container is "in good condition" regardless of the defect that may render it otherwise; the added examples appear superfluous. We recommend Ecology not adopt the added examples.
63. WAC 173-303-630(3)(i). Ecology proposes to require that containers be marked with the words "dangerous waste" or "hazardous waste" and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology's proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, particularly in laboratory settings. As a large research institution, most of PNNL's dangerous waste is accumulated in laboratories using small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because laboratory waste streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in minimizing the quantity of dangerous waste in busy research laboratory spaces with active processes and equipment, especially for mixed waste. During both accumulation and storage, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the

attached photo for an example of attempting to meet Ecology's proposed requirement for a one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology's proposed marking size; however, this practice precludes easy inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our storage units simply do not have sufficient space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in our storage units are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with the words "hazardous waste" or "dangerous waste" need to be revised in this manner. The existing Federal and state criteria to "clearly" mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size. Note: This paragraph should probably be designated (3)(a).

64. WAC 173-303-630(3)(ii). Ecology proposes to require that containers be marked with "an indication of the hazards of the contents." Examples include, but are not limited to, the characteristics and criteria of the waste. This proposed rule deletes the provisions of the GIR that cite the use of Department of Transportation labeling or placarding, Occupational Safety and Health Administration hazard communication standard labels, or a chemical hazard label consistent with the National Fire Protection Association Code 704 as acceptable examples. We object to Ecology's omission of these examples. In its November 15 webinar to discuss the pre-draft regulations, Ecology representatives commented that "none of them" (DOT, OSHA, or NFPA) are adequate to meet Ecology's proposed standard for risk labeling. By deleting these examples, Ecology is in essence adopting a risk labeling system during waste accumulation and storage that directly conflicts with its own requirements [WAC 173-303-190(2)] to label waste with the appropriate DOT warning label prior to shipment. We have previously pointed out to Ecology that the word "toxic" conflicts with the DOT labeling requirement unless the waste is a DOT poison. As a result, any marking of the waste as "toxic" (or any other hazard label that conflicts with DOT labeling requirements), as is frequently required, must be removed from the accumulation container prior to shipment and replaced with the appropriate DOT label. The addition of a separate, conflicting labeling system is unduly burdensome and does not protect human health or the environment. Further, the term "is not limited to" indicates that Ecology may expect generators to provide some unspecified marking for certain types of waste. However, the proposal does not explain when such a marking would be required, or what it would consist of. The rule is thus unclear as to what type of marking is actually required and could be the subject of questions of implementation by inspectors. We strongly recommend that Ecology adopt the language of the GIR regarding marking with "an indication of the hazards of the contents" without modification. Note: This paragraph should probably be designated (3)(b).
65. WAC 173-303-630(3)(ii)(A). Ecology proposes to require that containers be marked with "an indication of the hazards of the contents" and that such marking be legible from a distance of 25 feet or the lettering size is a minimum of one half inch in height. We agree that the marking should be of sufficient size to provide reasonable warning to staff and emergency responders. However, Ecology's proposed standard of legibility at 25 feet or ½ inch lettering is unnecessarily restrictive and would be very difficult to implement, particularly in laboratory settings. As a

large research institution, most of PNNL's dangerous waste is accumulated in laboratories using small containers, ranging from a few milliliters to 20 liters. In our context, waste must be accumulated in small containers because laboratory waste streams are naturally generated in small quantities and because accumulation of large quantities of waste may exceed fire code limits. Additionally, use of smaller containers is prudent in minimizing the quantity of dangerous waste in busy research laboratory spaces with active processes and equipment, especially for mixed waste. During both accumulation and storage, the size requirements proposed by Ecology are inappropriate for two reasons. First, it is not physically possible to mark many of our small containers with markings of the prescribed size (or readable from 25 feet). See the attached photo for an example of attempting to meet Ecology's proposed requirement for a one-liter container; the marking is larger than the container. It has been suggested that we could place the small container in a larger container to meet Ecology's proposed marking size; however, this practice precludes easy inspection of accumulation containers and could lead to a situation in which the primary container fails and the failure goes undetected for a period of time. Additionally, our storage units simply do not have sufficient space to place containers in much larger containers just to meet a marking requirement. Second, the distances from which waste containers are visible to staff and emergency responders in our storage units are much shorter than 25 feet. In the typical case of containers stored in chemical storage cabinets, the hazard and dangerous waste markings are not visible until the storage cabinet door is opened. Effective identification of a dangerous waste and its specific hazards can be provided with more appropriately sized text. Ecology has not advanced any information to explain why the criteria that have been in place since 1984 to mark the container clearly with the words "hazardous waste" or "dangerous waste" need to be revised in this manner. The existing Federal and state criteria to "clearly" mark should be adequate, as used in the Dangerous Waste Regulations since 1984, in lieu of setting a minimum size. Note: This paragraph should probably be designated (3)(b)(i).

66. WAC 173-303-630(3)(ii)(B). Ecology proposes to require that containers be marked with "an indication of the hazards of the contents." Such marking must be "understandable to employees, emergency response personnel, the public, and visitors to the site." Ecology's proposal to limit hazard warnings to text descriptions as the only way to achieve "understandability" unnecessarily restricts generators from using established, well-understood hazard warning systems. We believe that limiting the specific hazard warnings to text descriptions is not necessary or even beneficial. We recognize that untrained staff, visitors and the public may not fully understand symbolic hazard warnings (e.g., DOT, NFPA, and OSHA and hazard identification systems). However, text warnings such as "Ignitable", "Toxic" or "Reactive" may also provide little useful information to untrained people. The generic "Hazardous Waste" or "Dangerous Waste" statement is sufficient to warn untrained employees and the public to beware. Hazard-specific labeling is useful only to waste management employees and emergency responders, who are trained to understand DOT, NFPA and OSHA hazard identification systems. In reality, DOT and other hazard identification systems are likely to be more useful to waste management employees and emergency responders than text warnings by virtue of having more specific meanings. As an example, Ecology has suggested that "Ignitable" is an appropriate hazard warning. In fact, "Ignitable" wastes could include flammable liquids, flammable gases, flammable solids or oxidizers, or even combustible liquids -- each of which would require distinctly different approaches to emergency response. In this case the DOT labels, for example, provide far more specific and useful information than Ecology's suggested text warning. The same is certainly true of the "Reactive" hazard description. We recommend Ecology allow utilization of the labeling systems referenced in the GIR, i.e.

Department of Transportation, Occupational Safety and Health Administration hazard communication standard, or a chemical hazard label consistent with the National Fire Protection Association Code 704. Note: This paragraph should probably be designated (3)(b)(ii).

67. WAC 173-303-630(5)(c). Ecology proposes to add the criterion "…and allow for complete inspection of each container" to the definition of aisle space. The criterion of "complete inspection" is unclear and arbitrary. For instance, if four drums are placed on a pallet with sides touching, are they positioned in such a way to allow "complete inspection"? If drums are placed on the floor or in a secondary containment device so that the underside of the drum cannot be readily observed, does that placement impede "complete inspection"? When Ecology first adopted the thirty-inch aisle space requirement in 1991, it stated the reason was "primarily for the safety of departmental inspectors and to allow access to personnel and equipment to dangerous waste storage and accumulation areas."[2] "Complete inspection" was not cited as a purpose for aisle space. The proposed definition muddles the requirement for aisle space and the requirement to look for "leaking containers and for deterioration of containers" as given in existing WAC 173-303-630(6). Ecology can evaluate the adequacy of container inspections (e.g. when a two-container-wide row is adjacent to a wall) without adding vague criteria for aisle space. Consider deleting the word "complete" from the proposed paragraph; possible substitutes might be "adequate" or "sufficient" inspections..
68. WAC 173-303-630(6). Ecology proposes to require that weekly inspections be "conducted no more than seven consecutive calendar days from the last inspection". Ecology's proposed requirement is drawn, in part, from a 1983 guidance document prepared by EPA that defines weekly inspections this way; Ecology has insisted that it must therefore define weekly inspections this way in order to be "consistent with the Federal program". However, EPA has more recently specifically addressed the timing of "at least weekly" in the Generator Improvements Rule Response to Comments document ("Hazardous Waste Generator Improvements Final Rule Response to Comments Document, Summaries and Responses, October 4, 2016, available at https://www.regulations.gov/document?D=EPA-HQ-RCRA-2012-0121-0312). In this document, EPA stated that "The Agency believes the term "at least weekly" to mean "at least once each calendar week." Under this interpretation, while the calendar day an inspection could occur may change from week to week, one inspection would be required to occur within the calendar week as identified by the generator…" Ecology has not provided a reason why the flexibility to perform a weekly inspection once each calendar week should not be offered to the regulated public. The outcome is 52 weekly inspections regardless of how the time period between inspections is calculated. Weekly inspections should be conducted once each calendar week, consistent with EPA's interpretation.
69. WAC 173-303-640(5)(d)(i). Ecology proposes to add a requirement that underground tank systems have labels or signs above ground. Ecology has not explained how such signs would serve any useful purpose for a closed tank, pipe or appurtenant equipment buried several feet below ground. The situation would be different if the tank system component has an above-ground component (e.g. a vent pipe or access way) that should warn personnel of the hazard(s) of the waste. Such above-ground structures would likely be considered part of the "active portion" of the TSD in any case. Consider deleting the phrase "aboveground postings above each underground tank system" from the proposed rule.
70. WAC 173-303-640(5)(d)(ii). Ecology proposes to retain the requirement that the marking "Dangerous Waste" or "Hazardous Waste" be legible at a distance of 50 feet from the tank. This

[2] Ecology, "Responsiveness Summary: Amendments to the Dangerous Waste Regulations", 2/5/1991, p. 29, response 65.

requirement is impractical for waste tanks located in vaults or basements where access is limited. For instance, a tank may be in a closed room accessed only by a short hallway. Ecology's interpretation is that the sign must be visible (not "legible") 50 feet from the entrance to the room, which would necessitate placing the sign at such a distance that the location of the hazard is indistinguishable. This proposed requirement also is made for underground tank systems; see comment on WAC 173-303-640(5)(d)(i). Consider revising this requirement to read "…legible at a distance of at least fifty feet for outdoor tanks and twenty-five feet for indoor tanks, and for underground tank systems, the marking must be placed at each entrance to the active portion."

71. WAC 173-303-640(5)(d)(iii). Ecology proposes to require that tanks be marked with "an indication of the hazards of the contents." Such marking must be "understandable to employees, emergency response personnel, the public, and visitors to the site." Ecology's proposal to limit hazard warnings to text descriptions as the only way to achieve "understandability" unnecessarily restricts generators from using established, well-understood hazard warning systems. We believe that limiting the specific hazard warnings to text descriptions is not necessary or even beneficial. We recognize that untrained staff, visitors and the public may not fully understand symbolic hazard warnings (e.g., DOT, NFPA, and OSHA and hazard identification systems). However, text warnings such as "Ignitable", "Toxic" or "Reactive" may also provide little useful information to untrained people. The generic "Hazardous Waste" or "Dangerous Waste" statement is sufficient to warn untrained employees and the public to beware. Hazard-specific labeling is useful only to waste management employees and emergency responders, who are trained to understand DOT, NFPA and OSHA hazard identification systems. In reality, DOT and other hazard identification systems are likely to be more useful to waste management employees and emergency responders than text warnings by virtue of having more specific meanings. As an example, Ecology has suggested that "Ignitable" is an appropriate hazard warning. In fact, "Ignitable" wastes could include flammable liquids, flammable gases, flammable solids or oxidizers, or even combustible liquids -- each of which would require distinctly different approaches to emergency response. In this case the DOT labels, for example, provide far more specific and useful information than Ecology's suggested text warning. The same is certainly true of the "Reactive" hazard description. We recommend Ecology allow utilization of the labeling systems referenced in the GIR, i.e. Department of Transportation, Occupational Safety and Health Administration hazard communication standard, or a chemical hazard label consistent with the National Fire Protection Association Code 704.
72. WAC 173-303-830, Appendix I, B.5. Ecology proposes to revise the term "training plan" to "training program", consistent with usage of these terms in WAC 173-303-330(1) and (2). We do not support this change, as it fails to make the necessary clarification of what is subject to the permit modification procedures. WAC 173-303-330(1) describes the "training program" in very broad terms, and some of the prescribed content of the program (e.g. "…must be directed by a person knowledgeable in dangerous waste management procedures…" is not consistent with the proposed permit modification requirement. The proposed change would apparently, in this case, require a permit modification if the identity of the training director were to change. Ecology should further bear in mind that the material submitted by permit applicants in accordance with WAC 173-303-806(4)(a)(xii) is only an "outline" of the training program and a "brief description" of training design. Ecology usually makes this "outline" and "brief description" enforceable by attaching it to the permit and then calling it the "training program", but this is not the "training program" described in WAC 173-303-330(1). The "outline" and "brief description" are the only documents typically affected by the modification requirement,

not the entire “training program” described in WAC 173-303-330(1). Only the conditions of the permit (which may include attached material from the permittee’s application) should be subject to the permit modification procedures of WAC 173-303-830(4) and Appendix I. Neither the “training program” nor the “training plan” are attached to the permit and should thus not be called out in Appendix I as subject to modification control.