DEPARTMENT OF
ECOLOGY
State of Washington

Concise Explanatory Statement

Chapter 173-350 WAC

Solid Waste Handling Standards

Summary of rule making and response to comments

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Concise Explanatory Statement

Chapter 173-350 WAC
Solid Waste Handling Standards

Waste 2 Resources Program
Washington State Department of Ecology
Olympia, Washington 98504-7600

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Introduction

The purpose of a Concise Explanatory Statement is to:

- Meet the Administrative Procedure Act (APA) requirements for agencies to prepare a Concise Explanatory Statement (RCW 34.05.325).
- Provide reasons for adopting the rule.
- Describe any differences between the proposed rule and the adopted rule.
- Provide Ecology's response to public comments.

This Concise Explanatory Statement provides information on The Washington State Department of Ecology's (Ecology) rule adoption for:

Title:	Solid Waste Management
WAC Chapter(s):	Chapter173-350 WAC
Adopted date:	March 25, 2013
Effective date:	April 25, 2013

To see more information related to this rule making or other Ecology rule makings please visit our web site: http://www.ecy.wa.gov/laws-rules/index.html

Reasons for Adopting the Rule

Chapter 70.95 RCW, Solid Waste Management – Reduction and Recycling, established a comprehensive statewide program for solid waste handling and solid waste recovery and recycling to prevent land, air, and water pollution and conserve Washington's natural, economic, and energy resources. The statute further encouraged development and operation of waste recycling facilities and activities needed to accomplish waste recycling. Another provision instructed Ecology to promulgate rules and regulations necessary to carry out the purposes of the chapter. This includes giving solid waste handling permit exemptions to other categories of solid waste handling facilities that present little or no environmental risk and meet the same environmental protection and performance requirements as other similar solid waste facilities.

This rule amendment was needed for several reasons. Growing pressure within the solid waste management system to process more diverse feedstocks in ever larger quantities strained the capacity of the solid waste management system. In some cases it has distressed neighbors and impaired marketability of final products. The agency believes that the following changes are necessary to protect public health and the environment:

- A new requirement for odor management plans at larger compost facilities;
- Expanded requirements at those same facilities to improve operational management where finished product is stored;
- Tighter standards for physical contaminants to protect the environment and ensure viable compost markets in the long term;

- Other new requirements including:
    - defining capacity and throughput,
    - ensuring proper training, and
    - requiring representative sampling
    - controlling agricultural pests.

The amendments to the rule are intended as steps to repair the observed problems while preserving the long term integrity of critical solid waste management system elements.

Amendments to the rule were also needed to adopt permit exemptions. Ecology is directed by statute to provide permit exemptions for qualified anaerobic digesters. Ecology also clarified the requirements for anaerobic digesters that do not meet the exemption. Additional conditional permit exemptions were needed for small digesters and compost facilities to help grow necessary infrastructure for handling increasing volumes of organic wastes. The additional permit exemptions provide relief from administrative burdens, while continuing to require protection of the environment as a condition of exemption.

The Department of Ecology fully supports processing and treating organic materials to produce valuable end products through means such as composting and anaerobic/aerobic digestion, and recognizes the potential for other new conversion technologies for processing organic materials. These processes preserve valuable nutrient value and organic matter that can be used in lawns and gardens, or returned to our soils to enhance them for crop production, or aid in restoration projects for habitat protection and wildlife enhancement. Gas generated during anaerobic digestion can be used to generate electricity for local use, or returned to the power grid. At the same time, these management approaches reduce the amount of organic materials disposed in landfills or burned.

Differences Between the Proposed Rule and Adopted Rule

RCW 34.05.325(6)(a)(ii) requires Ecology to describe the differences between the text of the proposed rule as published in the *Washington State Register* and the text of the rule as adopted, other than editing changes, stating the reasons for the differences.

There are some differences between the proposed rule filed on September 18, 2012 and the adopted rule filed on March 25, 2013. Ecology made these changes for all or some of the following reasons:

- In response to comments we received.
- To ensure clarity and consistency.
- To meet the intent of the authorizing statute.

The following content describes the changes and Ecology's reasons for making them. Changes made solely for editing or clarification purposes are not included in this section.

Effective Dates. Different elements of the revised rule become effective at different times. The dates in the final rule are hard dates. In the proposed rule they were a certain number of months after the rule itself became effective. The change was made to provide clarity. Having specific dates will shorten the timeframe for submitting requests to modify permits from 12 to 8 months. However, that date is the date by which a *proposal* for modification is due. The actual effective dates for changes in operation and design as result of any modifications are still extended as a result of the change.

350-030(2)(a(i). The effective date for operating, environmental monitoring, closure and post-closure planning, and financial assurance requirements was changed from within 12 months of the effective date of the rule, to by June 30, 2014.

350-030(2)(a)(ii). The effective date for performance and design requirements was changed from within 18 months of the effective date, to by December 31, 2014.

350-020(2)(c). Language was added to clarify that a permit modification is required only, "If, as determined by the jurisdictional health department, significant changes to the operation, design, capacity, performance, or monitoring of a facility are needed to meet updated or new sections of this chapter,", and the date to *initiate* that process was changed from within 12 months of the effective date to by December 31, 2013.

Anaerobic Digester. This change was made based on stakeholder input and is considered a more correct term.

350-030-100. The definition of anaerobic digester was changed. The reference to an enclosed container was deleted and the definition now refers to a "vessel."

Bulking Agent. Stakeholders were confused by the term “clean” wood waste as a bulking agent. Wood waste may be received and sorted for different purposes. The definition of wood waste clarifies what is acceptable without reference to being clean.

350-030-100. The word "clean" was deleted from clean wood waste as a type of bulking agent; the definition now refers wood waste.

Capacity. This change was made in response to stakeholder comments that indicated a need for clarification.

350-030-100. The definition of capacity was revised to specify the maximum amount of material that can be contained "on-site at any one time," and to include "bulking" agents.

Organic feedstocks and materials. Changes were made in response to comments to clarify the hierarchy. Organic materials are solid wastes and organic feedstocks are organic materials that are suitable for transformation into marketable products.

350-030-100. The definition of organic feedstocks was changed to include bulking agents, and the word "waste" was deleted so that the reference is now to organic materials instead of waste organic materials.

350-030-100. The definition of organic materials was revised and the reference to "animal manure" was deleted.

Other conversion technologies. The change was made to clarify that there are processes other than composting, vermicomposting and anaerobic digestion that can be used to transform organic feedstocks.

350-030-100. A definition for “Other conversion technologies” was added: "Other conversion technologies" means processes that transform organic feedstocks into useable or marketable materials, but does not include composting, vermicomposting, or anaerobic digestion.

Physical contaminant. Rocks were removed from the definition at stakeholder request.

350-030-100. Rocks were deleted from the definition of physical contaminant.

Specified Risk Material. The language in Section 250 constituted a definition, and was moved to the definition section.

350-030-100. A definition for “specified risk material" was added.

Throughput. The definition was clarified by giving a point of reference.

350-030-100. The definition of throughput was clarified by referring to "incoming" feedstocks.

Yard debris. Stakeholders requested that sod not be excluded from yard debris.

350-030-100. A restriction stating that yard debris does not include sod was deleted.

Facility versus Site. The rules define facility but not site. The reference to sites was deleted in response to stakeholder request for clarification.

350-220(1)(a). Applicability was revised to refer only to facilities; the words "or sites" were deleted.

Applicability. A reference to composting and recycling was deleted since it was redundant to the purpose of the exclusion.

350-220(1)(a)(i). In the exclusion from applicability, the reference to "including composting or recycling" was deleted.

Biosolids. The agency had wanted to create reciprocity with existing provisions of Chapter 173-308 WAC. Stakeholders uniformly objected and the agency removed the language.

350-220(1)(a)(v). The word "managed" was substituted for "permitted" and all new following language regarding biosolids was deleted from 220(1)(a)(v)(A), (B) and (C).

Table 220-A There were observed inconsistencies in format between tables 220, 225 and 250. A number of changes were made to provide consistency. The most significant changes were expansion of permitting exemptions. An erroneous stipulation that composting had to occur in a vessel was deleted.

350-220(1)(b) Table 220-A. Revisions for overall consistency with similar Table 225-A.

350-220(1)(b) Table 220-A (1). A new conditional exemption was added for composting facilities with no more than 5,000 gallons or 25 cubic yards of material on-site at any one time without notification or reporting requirements.

350-220(1)(b) Table 220-A (2), (3), (4) and (5). Lower threshold for exemption was changed to reflect the 25 yard limit of new (1). The types of organic feedstocks in column 1 were expanded and clarified, the allowable volumes for exemptions were increased in column 2 and requirements specific to each exemption were clarified in column 3. The requirement for composting to take place in a vessel was removed from column 3. A permit exemption was added for zoo composting programs.

Inventory Turnover. The proposed requirement for turnover of inventory at compost facilities was removed on stakeholder request.

350-220(1)(c)(v). A requirement to use at least 50% of material on site each year, and 100% of the material every three years was deleted.

Annual Report Requirement. Relevant language was shortened and relocated.

350-220(1)c)(vi). The annual report requirement was moved from the body of the rule into Table 220-A, and the detail regarding content was deleted since it is specified by the department on the form.

Engineering documents. Clarification was added.

350-220(3)(b). Clarification was added that only engineering design and other engineering documents must be prepared by a professional engineer.

Traffic patterns. A requirement to show traffic patterns on drawings was added at stakeholder request.

350-220(3)(b)(ii). Traffic patterns were added to the details of required drawings.

Leachate collection. Clarified that leachate must be collected from areas where feedstocks are stored as well as prepared in response to stakeholder request.

350-220(3)(e)(i). Storage was added where leachate is collected from feedstock "storage" and preparation areas.

Compost cover. Language was clarified so that readers can understand there are different kinds of covers.

350-220(4)(a)(vii)(B). The words "such as a synthetic material or a layer of finished compost" were added to clarify what was meant in reference to a cover.

Finished Compost Parameters. Stakeholders characterized some parameters as marketing criteria. Those were removed. A limit on film plastic was increased based on stakeholder input, with restrictions on use of material failing the new increment.

350-220(4)(a)(x) Table 220-B. Total nitrogen, electrical conductivity, carbon to nitrogen ratio, moisture at 70C and organic matter were deleted as analytes for finished product. The limit on film plastic was increased from < 0.1% to <=0.25%. A footnote regarding film plastic was inserted, referencing restrictions on material with more than .1% film plastic (see WAC 173-350-220(4)(f)(iii)(D)(I)).

Odor Management and Complaints. A reference to a plan was deleted, since the subject is actually an element of the overall plan of operations. Language was added to ensure a documented response to odor complaints. The requirement for a progressive odor management plan was deleted, on stakeholder request, and replaced with a requirement to describe facility features intended to prevent offsite odor impacts.

350-220(4)(f)(ii)(A). The reference to a "plan" was replaced with a description of how staff will document and respond to nuisance odor complaints should they arise, and a requirement to summarize actions taken was added.

350-220(4)(f)(ii)(B). The reference to a progressive odor management plan and possible facility improvements that could be made was replaced with a description of facility and operational features to prevent nuisance odors beyond the facility's property boundary. The 18 month allowance to complete the progressive odor management plan was deleted.

Film Plastic. Based on stakeholder input and related to changes to Table 220-B, a restriction on the use of compost products with more than .1% film plastic, up to .25% was added. A footnote was added referencing another part of the rule, which was amended to require informing customers with a label or information sheet.

350-220(4)(f)(iii)(D)(I) and (II). A requirement to provide a label or information sheet for compost with film plastic above .1% and up to .25% by weight was added. The statement stipulates excess film plastic and places limitations on use. Refer also to amended Table 220-A. Revised language to allow for removal of film plastic from the site as an option.

Material Mass Balance. By stakeholder request the reference to mass balance, a more technical and exacting concept, was replaced with a requirement for discussion and basic calculations.

350-220(4)(f)(iii)(F). Language requiring mass balance calculations related to material mixing and decomposition was replaced with a requirement for discussion and basic calculations.

Construction Records. On stakeholder request, health departments need to respond within 30 days of receipt of final construction records so that facilities can begin operation.

350-220(9). A requirement was added for the jurisdictional health department to make a determination on construction records within 30 days.

Compost versus Solid Waste. When compost has been treated and meets standards for quality, <u>and</u> is then used on site or distributed off site, it is no longer a solid waste. Language was revised to clarify that compost that does not meet this standard remains solid waste.

350-220(10). Revised the text to make it clearer that compost that does not meet standards is solid waste.

Table 225-A. There were observed inconsistencies in format between tables 220, 225 and 250. A number of changes were made to provide consistency. The most significant changes otherwise were expansion of permitting exemptions.

350-225 Table 225-A (1). A new conditional exemption was added for facilities with no more than 5,000 gallons or 25 cubic yards of material on-site at any one time without notification, reporting, or testing requirements.

350-225 Table 225-A (2), (3) and (4). The lower threshold for exemption was changed to reflect the 25 yard limit of new (1). The types of organic feedstocks in column 1 were expanded and clarified, the allowable volumes for exemptions were increased in column 2 and requirements

specific to each exemption were clarified in column 3. Items (2) and (3) were revised to clarify that exemption applies to vermicomposting only.

350-225(2)(b). A requirement was added to allow inspections by the department and/or jurisdictional health department at reasonable times.

Facility versus Site. In response to a request for clarification, consistent with the change in 220(1)(a), the word site was deleted since the rule defines facility but not site.

350-250(1). The word "sites" was deleted so the reference on applicability is only to facilities.

Enforcement. A reference to statutory enforcement provisions was inserted.

350-250 (2)(a). A citation to a statutory enforcement provision was inserted: "Violations of the terms and conditions of Table 220-A and (b) of this subsection may be subject to the penalty provisions of RCW 70.95.315."

Table 250-A. Revisions were made for consistency with other tables. An actual definition was removed to the definitions section. Exemptions were expanded similar to Tables 220 and 225. Allowance to apply digestate to areas under a Farm Management Plan was deleted because this provision is not supported in the applicable statute and there is no state or local oversight or evaluation of those plans.

350-250 Table 250-A. Table 250-A was revised to be more consistent with other tables 220A and 225A. Moved definition of specified risk material to definitions in Section 100. The allowance for application of digestate to sites under a farm management plan in (3)(e) and (f) was deleted (application to sites with a Dairy Nutrient Management Plan was retained).

Performance Standards. Clearer language was inserted.

350-250(2)(b)(i). Alternative language requiring compliance with the performance standards of WAC 173-350-040 was inserted.

Capacity and Notification. Limits and requirements were deleted here as they were included and expanded in Table 250 A.

350-250(2)(b)(v). Regarding capacity and notification was deleted to achieve consistency with revised Table 250-A.

Response to Comments

Description of comments:

- Ecology accepted comments from September 18, 2012 until November 2, 2012. This section responds to comments that we received during the public comment period.

- For purposes of the agency response, comments were excerpted from original submittals, in most cases verbatim. It was necessary in many cases to adjust the format for consistency in the document. Introductory statements were generally not included unless they contained some clear comment on the rule that was not otherwise captured in an excerpt elsewhere.
- Comments or variations of comments may appear in more than one location. In some cases intervening material not relevant to the subject at hand was deleted, and was indicated as such by an ellipsis ...
- The agency reviewed all comments in preparing this Concise Explanatory Statement. Interested persons are referred to Appendix A for actual copies of submittals, which contains the official record of comments received.
- In some cases Ecology responded comment by comment. In other cases the agency grouped similar comments and responded following a series of comments. This is generally indicated in the text.

Commenter identification:

Comments are grouped by subject matter, as reflected in the **Table of Contents**. Some comments are responded to individually and others are grouped together, followed by a response to that group of comments. The page number in the **Commenter Index** will locate the attribution for all comments from any individual. In the response to comments, the attribution follows the comment. (RCW 34.05.325(6)(a)(iii))

Governor's Executive Order

In November of 2010, then Governor Christine Gregoire issued Executive Order 10-06, directing state agencies that report to her to suspend non-critical rulemaking activities. The order was subsequently extended another year. The Office of Financial Management established criteria against which agencies evaluated potential rulemaking in order to determine whether to move forward. ***Ecology's response follows comments on this issue below.***

Comment: Regulation of Finished Compost Expands Authority, and the "Requirement to Sell Product" Ignores Market Realities.

Ecology's rulemaking reaches beyond the regulatory framework for the processing of compost, and enters into regulating a commodity- finished compost. The proposed rule also mandates that all of the compost produced be sold within three years, by limiting the storage of the finished product.

The proposed rule dramatically expands the scope of regulation under RCW 70.95. For over forty years, citizens, local governments and solid waste facility operators have understood that this regulation has been limited to solid wastes, not recycled products. The law and the implementing regulations in WAC173-350 were not intended to regulate the storage or handling of commercial products created by recycling. Until this proposal, they have never been extended to cover those commodities.

The exception to the Governor's Executive Order on Rulemaking gives no suggestion that the rule would cross such a significant policy threshold. We understand that the Department has been advised by the Assistant Attorney General that it has the legal authority to extend its jurisdiction under RCW 70.95 to include commercial products stored on the site where they are manufactured in a regulated recycling facility. Even if this legal interpretation is upheld, that does not mean that this is good or appropriate public policy. This expansion of regulatory authority would establish a significant precedent for Ecology to regulate commodities that was never intended or envisioned by the Washington Legislature. Such a significant policy change should not be buried in a relatively minor rulemaking process that is obscure to many of the potentially affected stakeholders.

The requirement to sell finished compost within certain time periods also ignores market realities. The evidence demonstrates that the sale of compost material is influenced by season, economy, and general market conditions. A restriction on storing finished product on-site could require facilities to close their doors to incoming materials from local governments, citizens and businesses, placing them in violation of contracts, and jeopardizing consumer participation in recycling efforts. This regulatory approach could result in the decline of composting activities in Washington State. It could result in materials being landfilled as an alternative means of achieving regulatory compliance. Using an environmental regulation to reach into the private marketplace and regulate commerce is a major public policy change…

Ecology has failed to demonstrate any environmental benefit to justify this dramatic regulatory reach.

Suggested amendments

- Delete all sections that extend regulatory authority to regulate finished compost or require the sale of this commodity within a certain time.

Bartlett, Cedar Grove Composting

Comment: WORC has been involved with this rulemaking process, which has substantial impacts on our membership, since early 2011 when DOE decided to proceed with rulemaking related to composting under WAC 173-350-220 despite there being a moratorium placed on rulemaking pertaining to all of WAC 173-350. We were concerned at the time that although WAC 173-350-220 along with other solid waste rules could use some updating (particularly for anaerobic digestion technologies and topsoil management) focusing only on the composting part of the rule could cause more confusion (see attached 4/8/11 letter). Unfortunately, this has turned out to be the case with most of the current rulemaking process, particularly in regard to the blurring of the distinction of when compost is and is not a solid waste, a critical issue for maintaining a viable composting industry in Washington State.

> ***Agency inserted referenced comment from April 8, 2011 communication:***
>
> *March 1, 2011 - Rule-making will continue: The Director announced that Ecology will proceed with rule-making related to composting only in WAC 173-350, citing OFM exemption criteria 3 (e):*
>
> Although WAC 173-350-220 along with other solid waste rules could use some updating, focusing only on the composting part of the rule will cause more confusion. Other parts of the WAC 173-350 standard are very closely related to what occurs in section 220. By taking a piece meal approach, the Department is not likely to get scientifically based final rules that will integrate well with other sections. In addition, we believe other parts of WAC 173-350 such as those pertaining to anaerobic digestion and topsoil management standards are more critical to address in the near term.
>
> WORC requests the exemption for rule making for the composting section in isolation be withdrawn and that all rule making under WAC 173-350 be addressed at the same time.

Corum, Washington Organic Recycling Council

Comment: DOE should not move ahead with the rulemaking that pertains to composting . WRRA does not believe that the sections dealing with composting, new definitions and standards, meet the criteria for exemption to the Governor's Executive Order on Rulemaking.

Lovaas, Washington Refuse and Recycling Association

Comment: DOE should not regulate finished products under WAC 173-350.

WRRA does not believe that the sections dealing with composting products, meet the criteria for exemption to the Governor's Executive Order on Rulemaking and would not have been granted permission to proceed had this element been fully disclosed. This rule proposal is an overextension of DOE's regulatory authority to the finished product, which goes beyond regulation of "solid waste."

Lovaas, Washington Refuse and Recycling Association

Comment: I understood that these updates for the rules were to improve the permitting and development of efficient compost facilities and operations, and due to the Governors order to hold any mandated requirements, there would be a reduced and more efficient standards. There appears

to be increased requirements for plans. More plans cost more to develop. This is not conducive with the intent of the Governor's order to hold mandates that increase government costs.

Harn, Chelan County Public Works

Governors Executive Order – Ecology Responds

At the time of the original suspension order, Ecology was planning to revise Chapter 173-350 WAC in its entirety. Because of the Governor's Order, Ecology's Director determined that it would move forward only with the compost and organics-related portions of the rule.

The agency believed then and now that citizen and local government concerns about off-site impacts, as well as significant problems with compost quality, justified moving forward with sections of the rule pertaining to organics management. In the same process a statutory exemption for on-farm anaerobic digestion created by the 2009 Legislature was incorporated into the rule, as well as a permit process for anaerobic digesters that might not quality for the exemption. The agency also addressed an emerging class of small organic waste conversion technologies.

There were many issues that led to the need to update the rules. Problems with compost quality have caused the state's largest purchaser, the Washington State Department of Transportation to steer away from specifying coarse products for their projects and to begin investigating other materials. The Department of Transportation has clearly stated its disappointment to Ecology. Neighbors of some larger compost facilities have been vocal in their criticisms, alleging impacts to air quality. In some cases leachate generated from compost operations has been a concern. These and other considerations identified in the rulemaking process argue for better regulation of composting and compost products remaining on site. Compost is a dynamic material subject to change over time. Increasing success at diverting organics from disposal has brought challenges to maintaining a healthy foundation for successful long-term solid waste management in Washington state.

General Comments

This section contains general comments that did not fit well in the defined sections, and comments that expressed some degree of support or opposition to the rule. Many of these excerpts are drawn from introductory statements in submittals, but the agency wanted to address them. Specific issues reflected in the comments in this section are addressed throughout the agency's response in the pages that follow.

Comment: Washington State's 49% recycling rate is largely due to the diversion of organic solid waste materials to composting rather than landfill disposal.

Corum, Washington Organic Recycling Council

Comment: Seattle Public Utilities supports the Department of Ecology's general environmental and sustainability goals for this rule revision which focuses on composting facilities and develops new regulatory sections for permit exempt and permitted anaerobic digesters. Our ability to reach our recycling goals is dependent upon having a thriving composting and organic waste processing industry that is capable of receiving and processing our residential and commercial yard, food waste and manufactured organics with minimal impacts on human health and the environment. This industry is also expected to produce high quality compost end products that can be utilized for gardening, landscaping, storm water management and agricultural end markets. We intend to

support these private industry efforts by working with our residential, commercial and transfer station customers to minimize contamination in yard/foodwaste containers and self-haul loads. We also will continue to promote the expansion of compost end markets through public agency procurement and requirements for the use of compost in our landscape maintenance and stormwater codes.

The proposed rule amendment language, however, does not fully achieve DOE's stated goals and could use clarifying revisions…

Croll, Seattle Public Utilities

Comment: Okay, we just would like to have also the environmental justice issue. You do need to have people from the impacted community on the panel that you are working in. And the fact that with citizens or environmental groups helping, because what has happened in Yakima County, citizens are brought to the table after the rules are made and then ignored, totally ignored on their comments. So we need to have some type of insurance by having citizens on the actual panels not as an afterthought; because that is breaking environmental justice law, state and federal

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: Please accept this letter from the City of Marysville (City) commenting on the proposed Rule Amendments to the Solid Waste Handling Standards. The City recognizes the value of composting and fully supports the intent to encourage small composting facilities. The City also supports the proposed goal of improving the environmental performance of large scale composters. The City has a vested interest in defining regulations for composing facility processes as our citizens are routinely expressing significant impacts to their quality of life regarding nuisance odors- particularly those from large scale operators.

Nielsen, City of Marysville Public Works

Comment: Snohomish County Solid Waste Division supports the Department of Ecology's goals for this rule revision which focuses on composting facilities and anaerobic digesters. A robust and successful organics management system is important to Snohomish County for meeting our materials management and environmental goals and this includes ensuring that properly operating facilities are available to process collected organic materials and that there are markets and end uses for the resulting compost and mulch. Over 80,000 single family residences subscribe to curbside organics collection services in Snohomish County, and many others self-haul their yard debris to compost facilities. In addition, many businesses subscribe to organics collection services for yard debris and/or food waste and food contaminated paper.

We are working with solid waste collection companies that provide curbside collection of organics to minimize contamination and to help "close the loop" with organics by promoting the use and purchase of locally-made compost. We will also soon revisit all commercial accounts that have organics collection service to help them improve their practices and minimize contamination of their organics stream. The proposed rules are meant to improve the overall compost system and as such, it is important that the proposed rule changes be carefully considered to ensure they will have their intended results and not unintended consequences. In some cases, we believe further work is needed before the rules are finalized.

Jackson, Snohomish County Public Works

Comment: Waste Management (WM) is pleased to provide comments, during the formal comment period to the Washington Department of Ecology (Department) on their recently released composting facility and anaerobic digestion rule amendments. We believe the draft rule proposal is timely, appropriate, and comprehensive given the collective effort across Washington to cultivate organics collection; yet, the Department foreseeing continued organics expansion also recognizes that composting and anaerobic digester facilities need to be effectively operated, composted material managed, and compliance issues mitigated. Thus, we applaud the Department's efforts to minimize the environmental impact of organics management while driving the industry to fully extract the highest value from our state's organic resources and facilities. The mixture of performance-based standards with prescriptive standards as presented is ideal. Performance-based rules are more dynamic, allowing the experienced and knowledgeable compost industry to design methodologies to effectively meet the standards while spurring innovation and new technologies. However, prescriptive standards in areas such as testing requirements and facility closure are also needed to ensure a composting operation protects both human health and the environment.

Shanley, Waste Management

Comment: Making meaningful changes to the agency rules are desperately needed and long overdue. The proposed rule changes are not sufficient for the health and welfare of neighboring communities. Please modify the proposed rules by adding requirements that are meaningful and protective of neighboring communities. Thank you for your consideration of these comments.

Williams, Tulalip Tribes

Comment: WAC 173-350. King County strongly supports sustainable organics management efforts that protect public health, safety and natural resources. Sustainable organics management such as composting and anaerobic digestion helps keep organics out of the landfill and turn a waste into a valuable resource that is beneficial to our rate payers, cities, private partners, and our soil, air, water and climate.

At the same time, organics management must be carried out in a manner that minimizes impacts on neighboring communities. King County Solid Waste takes great pride in the award winning management of the Cedar Hills Landfill and state-of-the art privately run landfill-gas-to energy facility. We expect other public and private managers of solid waste in the state to achieve equally high levels of success in their management.

King County concurs with Ecology on the notable goals to ensure that organics management improves in the state. We support the goal of the proposed rule revisions to ensure that rules for composting, digestion and other methods of converting organics help facilities process materials and produce a product that protects human health and the environment. We are particularly supportive of the intent to improve the environmental performance of large scale composters and at the same time to help protect long term markets for compost products by improving compost quality.

McLaughlin, King County Solid Waste

Comment: I‘d like to begin by sort of complimenting Ecology; I think the first round of comments were fairly lively over a year ago. I was here in this room when it was a webinar-based program. And I do see that reflected some changes which is pertinent when you’re dealing with a government agency.

Turner, Consultant, West Richland (Public Testimony)

Comment: What I’ve heard in the comments causes me some concern in that.. and I will qualify myself, I have been an operator and a manager of a regulated compost facility and permitted facility at the university for eighteen years and I’m now also responsible for solid waste, all solid waste on campus including biological waste and infectious diseases. And the idea of these rules and encouragement of a reuse and recycling is a good thing in my opinion, and I commend the department for their intent.

Finch, Citizen, Pullman (Public Testimony)

Comment: I think the comments of citizens, you know, expressed valid concerns, what I’ve heard is pretty specific to a certain area, Yakima County, I’m sure you will consider that when you are looking at a statewide regulation. What I would like to remind people of is composting is the best management practice compared to what the other alternatives are, specifically for manure. That is our main feed stock at the Washington State University facility and the University arrived at the decision to compost due to environmental problems in regards to odors and surface water contamination from the way manure used to be managed. And if you think you have problems now, you know try and manage manure without composting as probably the most effective tool available. We have seen significant improvement; our facility is located right on the edge of campus. Ninety percent of the students and faculty don’t even know we’re there. It works and I just want to remind people that it is better than the alternatives which tend to be stockpiles of manure that sit around for eight to ten months a year and then are eventually land applied with no aerobic treatment and no pathogen reduction standards.

Finch, Citizen, Pullman (Public Testimony)

Comment: Cedar Grove appreciates Ecology's interest in our comments. In our opinion, the Draft Rule needs to be re-evaluated. In its current form, it will institute redundant regulations on most existing composters which will increase costs significantly without providing additional environmental benefits. The cost-benefit analysis is fatally flawed and provides an inaccurate economic analysis of Ecology's rulemaking.

Bartlett, Cedar Grove Composting

Comment: It also seems contradictory for DOE to be proceeding with this rule amendment and adoption by the end of this year when 1) the agency is continuing with its odor/toxic air emissions studies at composting facilities around the state and 2) a major public/privately sponsored odor monitoring study is underway in the Everett area. Both of these studies should provide some guidance as far as odor sources and best odor management practices at composting operations.

Corum, Washington Organic Recycling Council

Comment: After reading through the proposal, examining the cost analysis provided by the Department of Ecology, and discussing the issues within industry associations, we conclude that these regulatory changes should not be implemented as written. There is still confusion as to the definitions and impacts they would have to an industry that is already weakened. At a time of decreasing facilities, increasing feedstock volumes, and a slump in sales, regulating a decrease of on-hand materials does not fix the problem.

We ask the Department of Ecology to keep the review period open for a longer period of time, re-engage with the trade associations (as well as other stakeholders), and not rush the implementation of new rules as we strive to do what is best for the State of Washington.

Schutt, Royal Organic Products

Comment: Substantial changes are needed to the present draft of the WAC 173-350 Amendments. We strongly urge that the DOE substantially revise these rule amendments and re-issue another version which will not have such a negative impact on the state's composting industry for at least one more round of public and stakeholder comment.

Corum, Washington Organic Recycling Council

Comment: In conclusion Barr-Tech was hoping that the new 173-350 WAC Amendments would create more, not less, compatibility and continuity between the two composting regulations, however we believe it is less clear with the Amendments as written. We feel that there needs to be some major revisions to what is proposed and we would strongly urge the Department to reconsider the Amendment and take into consideration the changes and comments we have submitted. We would urge the Department to postpone the final rule adoption, revise the rule and give the industry another opportunity to comment.

Deatherage, Barr-Tech

Comment: I ask that Ecology re-revise the proposed WAC 173-350-220 regulation. As currently written, this regulation is likely to reduce recycling capacity for organic wastes in Washington as well as eliminate numerous small businesses. The overwhelming number of revisions in this regulation are not science based health and safety oriented and will have serious negative implications and high costs for the composting industry and small business associated with that industry. After such a re-revision and a realistic analysis of the costs and potential benefits of the revision, another round of public comment should be taken to ensure additional unintended consequences are not invoked.

Thomas, Terre-Source

Comment: I have reviewed the recent version of the revised WAC 173-350-220 for composting and am very concerned by some of the elements of these revisions. North Mason Fiber Company is a small family-owned and operated business that recycles various organic materials through composting. We provide living wages for half-dozen people in a small town strongly hit by the recession. We support hauling and transportation jobs in this area. We provide an environmentally positive destination and use for waste products from the fishing industry in Washington state. We responsibly recycle materials from that industry that previously had been dumped in Puget Sound and without us would need to be landfilled. We process and produce environmentally beneficial

products from the storm debris generated in 3 counties. And we provide a safe and responsible processing option for overrun from composting facilities in Western Washington.

Our facility is unique in its location, size, and infrastructure for processing these organic materials on 30-acres of largely an 18-inch thick structural pavement section, on a rail line, permitted to accept 80,000 tons per year of organics.

Brad Jones of Gordon, Thomas, Honeywell, with 24-years of experience in the solids waste industry in Washington state has told us that our contribution to the recycling capacity of this region is critical and it would be "catastrophic" to the recycling and waste handling capability of the region should we shut down. Yet this is precisely what this second iteration of revised regulations appears intent on causing.

We expended money and time last spring reviewing, communicating and responding to that version of proposed regulation. Rather than feeling heard from that process, this version of regulation revision appears to have sprung completely anew. Different sections have been revised and different concepts and definitions incorporated. We did not ask for this regulatory revision. Although the existing WAC 173-350-220 is not perfect, it is preferable to the current revisions. Because the rest of the WAC is under a moratorium on rule revision, but this section has been pushed through, we can only wonder where the motivation originates. It appears Department of Ecology is intent upon making work for themselves to justify their existence at our expense. Our business has also been impacted by the economic conditions and we resent and can no longer afford these trivial expenditures and diversions from the work of our business.

Dressel, North Mason Fiber

Comment: In recent weeks, local processors have expressed concern to my staff regarding the proposed revisions to 173-350 WAC. In some instances, these companies believe that the proposed changes will have crippling consequences. This concerns Kitsap County greatly, as we have worked diligently over the past several years to make organics diversion a priority, consistent with the state solid and hazardous waste management plan.

Since the publication of the State's solid and hazardous waste management plan (Beyond Waste Plan), Kitsap County and local service providers have implemented a series of programs, designed to divert residential and commercial organics from the waste stream, including, but not limited to:

- residential yard and food waste curbside collection,
- commercial organics collection,
- a comprehensive education and outreach program that promotes composting, and
- a school organics recycling program (Food to Flowers).

Both of the facilities that manage the material in Kitsap County are small, family-run businesses. We rely on these facilities to process our material safely and effectively, and we believe they have been relatively successful meeting our expectations.

Our fear is that undue costs put on these facilities may force them out of business or increase costs to a point where our programs are unsustainable. This would put Kitsap County in a very uncomfortable position -likely discontinuing our established programs, and forcing the material we have worked so hard to divert, back to landfill disposal.

At a time when demand for finished compost is down and compost facilities are struggling to stay afloat in the current regulatory framework, it may not be the time to put more analytical testing and consultant costs on these facilities. We encourage the Department to continue working with the industry, and to come to a solution that will support the continued success of existing programs.

Campbell, Kitsap County Public Works

Comment: Barr-Tech was hoping that the new 173-350 WAC Amendments would create more, not less, compatibility and continuity between the two composting regulations, however we believe it is less clear with the Amendments as written. We feel that there needs to be some major revisions to what is proposed and we would strongly urge the Department to reconsider the Amendment and take into consideration the changes and comments we have submitted. We would urge the Department to postpone the final rule adoption, revise the rule and give the industry another opportunity to comment.

Deatherage, Barr-Tech

Comment: Collection companies are working tirelessly throughout the State to reduce incoming contaminants and residual contaminants in finished compost in order to effectively market products and divert more and more waste from landfill disposal. We strongly encourage the Department to reconsider these proposed provisions in the rule, and reach a compromise that retains the integrity of the industry, but does not place an economic burden on a growing industry.

Huycke, Republic Services

Comment: We have reviewed the proposed rule changes, the Preliminary Cost-Benefit and Least Burdensome Alternative Analyses, and the Small Business Economic Impact Statement. The detrimental effects to the industry due to the proposed changes are not adequately addressed. Five years ago, in 2007, there were 41 permitted composting facilities in the state and there are now 33 reported. We are aware of small governmental (city and county) operated facilities, that received grant money from the Department of Ecology, are auctioning off their inventories and further degrading the markets. At a time of poor economic conditions, and a weakened industry, now is not the time to insert new regulatory mandates into areas that should be left to market forces.

Schutt, Royal Organic Products

Comment: DOE should not move ahead with the rulemaking that pertains to composting.

…Further, we do not believe the proposed changes have been fully vetted with the industry members (generators, collection companies and composters). We believe that the need to clarify definitions (i.e., capacity, physical contaminants and yard waste) is reason enough to allow more time to reach a consensus proposal that is clear to the industry and provides enforceable language for the regulators…

…The obvious key is to research and institute measures which not only protect the environment and public health and safety, but also allow for an end use product that is useful and affordable. That is one of, if not the primary, goals of recycling, and we firmly support it. We would not want to see any unnecessary regulation that would adversely impact that goal.

Lovaas, Washington Refuse and Recycling Association

Comment: WRRA is appreciative of the time and effort DOE staff has put into this project. This is not an easy subject to master and the dedication and professionalism of the people at DOE is always apparent, and is to be applauded, both by our industry and the consumer. That being said, in all frankness, I am compelled to say that the public hearing I attended in Bellevue held on this proposal was lacking in definitive explanations and answers. There were simply far too many "I don't knows," and/or "we have to check on that" to convince the audience that this proposal is ready for adoption.

WRRA understands that both the original project "lead person" and "rule process" person have both left the Department before the project's completion. This has been a setback to the industry as well as the department. Yet, it is not an excuse for the lack of answers or clarification that is needed at this critical juncture. This gap leaves too many questions unanswered as to this proposals intent and language. If the rulemaking has to be delayed because key personnel are no longer available, so be it. It is better to use some extra time to allow the newly assigned personnel to get "up to speed" than to forge ahead with obvious gaps in the proposal.

Lovaas, Washington Refuse and Recycling Association

General Comments – Ecology Responds

Various stakeholders expressed support for all or some part of the rule amendments, and remarked on their own commitments to further organic recycling in Washington. Ecology appreciates stakeholder efforts, both those of local governments and businesses to further recycling in Washington. Ecology wants to see as much clean organic matter diverted from disposal to recycling opportunities as possible. Over the last ten years the organics portion of diverted materials has been around 30% (not all becomes compost, some for example, becomes hog fuel).

Ecology appreciates local government commitments to working with customers to improve the quality of feedstocks delivered to composters, and likewise the commitment of industry to address this issue. We believe collaboration between collectors and facilities is essential to reducing contamination from commercial and curbside collection programs. We also heard the concerns of community leaders regarding offsite impacts. Ecology is committed to helping reach intended goals of well run facilities that do not have adverse offsite impacts.

Ecology respects the interest of all commenters in participating in this rulemaking process as well as other public processes. In this rulemaking effort we have encouraged comments from all interested persons throughout the process including citizen concerns as well as those of the regulated community. We appreciate the time and resources required and used to participate in the rulemaking process.

Commenters also expressed concern about the rule for a variety of reasons. Ecology has responded to those concerns throughout this document.

Some stakeholders were concerned with the cost of implementing the rule and questioned the agency's economic analysis. Ecology made changes in the final rule, some of which will lessen the economic impact. The Cost-Benefit Analysis was revised to reflect changes, including revised assumptions showing an increased cost for developing and approving plans. Some comments reflected incorrect assumptions that made the costs seem higher than they would have been. Ecology gives clarification regarding those assumptions throughout this document.

Ecology understands that physical contaminants originate with the source, not the composter. The rule will require facilities to have a plan to segregate and clean up loads with more than five percent contamination, or to reject those loads. Ecology believes this approach can redirect some of the economic pressure to the collection side. That approach has reportedly worked well for one large composter, and we hope it will prove to be an effective tool for others as well. Issues with compost quality have already damaged existing programs. This rule will help improve compost quality. Ecology has no desire to cause economic difficulties for small (or large) businesses.

The agency is aware of ongoing odor studies. Amendments to the rule are not limited to compost facilities, and to the extent that they are, not all issues that were addressed are about odors. With this rulemaking effort Ecology puts in place a statutory exemption for on-farm anaerobic digestion

created by the 2009 Legislature, as well as a permit process for anaerobic digesters that might not qualify for the exemption. The agency also addressed an emerging class of small organic waste conversion technologies and broadened exemptions for qualifying small systems. The results of current odor studies will be considered when creating a guidance document for managing response to odor complaints. On balance the agency does not believe that delaying adoption of the rule pending results of the latest odor study(ies) is an appropriate course of action

Ecology has articulated the reasons we believe the rule amendments are necessary at various points in the process. In this process we identified stakeholders, and asked people what issues they wanted addressed. Next, we developed a draft rule that went out for public review and comment. We held a webinar to discuss how issues were being addressed and had further discussions with stakeholders to understand issues. We took all comments into consideration to produce the proposed rule language that appeared in the Washington State Register for the formal public comment period where we accepted written comments plus oral comments at two public hearings. After the formal public comment period ended, we began reviewing those comments and made additional changes to the rule based on public input

We appreciate the contribution of Washington's compost facilities to the local economy and to statewide recycling and composting. Ecology will work with local governments and stakeholders to successfully implement the rule while keeping goals in sight.

Effective Dates

Most commenters felt the timeframe for compliance with the proposed rule was too short. One commenter recommended extending the deadline for up to sixty months. There were also potential conflicts in the proposed compliance dates – that if a facility consumed all of the time allowed to come into compliance with one set of expectations, it might be unable to comply with the requirements of another. One commenter urged a shorter timeframe based on historic odor issues. Ecology's response follows the comments below.

Comment: Page 33, comment on WAC 173-350-220(4)(f)(ii)(B)

(B) A progressive odor management plan that must include a description of facility and operational improvements that could be made if nuisance odors are identified beyond the facility's property boundary, as determined by the jurisdictional health department, the department, or the air authority. The description must address the receiving, composting, curing, and storage areas of the facility. Facilities will have eighteen months after the effective date of this chapter to complete the progressive odor management section of their plan of operation;

Recommend that this be reduced to 12 months given the long standing odor problems encountered at Cedar Grove Compost.

Pon, Public Health - Seattle & King County

Comment: The revision states, "WAC 173-350-030 Effective Dates. (1) Effective Dates. These standards apply to all facilities, except existing facilities, when updated or new sections in this chapter become effective."

I believe this could be written such that the meaning were more clear.

Suggestions, if this is the intended meaning; "*WAC 173-350-030 Effective Dates. (1) Effective Dates. These standards apply to all facilities when updated or new sections in this chapter become effective, except for pre-existing properly permitted facilities*."

Or

"These standards apply to all facilities permitted after the effective date of these updated or new sections in this chapter."

Prosch, Chelan-Douglas Health District

Comment: The shortened timelines required to comply with the provisions of the proposed amendments appear to be unnecessarily onerous and could result in increased collection and processing costs passed on to customers in the form of higher tipping fees as the owners of composting facilities hire additional staff or reassign existing staff to comply with the expedited compliance requirements. We recommend that the Department of Ecology collaborate with composting facilities to establish a more reasonable set of timelines.

MacGillivray, City of Kirkland

Comment: These revisions are costly and far-reaching in a time of economic crisis within this industry. Facilities should be given at least 60-months for compliance with any additional requirements.

Thomas, Terre-Source

Effective Dates – Ecology Responds

Response: The original effective dates in the rule reflected a transition from previous standards under Chapter 173-304 WAC to an entirely new Chapter 173-350 WAC. A longer transition to an entirely new rule was needed in that circumstance.

Most facilities are operating in compliance with existing rules, and will likely be substantially in compliance with the final rule. Many of the changes will be incremental changes to existing requirements, and not brand new requirements. There is a benefit to the public and the environment by not extending the timeframe for compliance where off-site environmental impacts are occurring, particularly around odor and compost quality where the industry has already had a significant amount of time to respond. The rule does have a variance provision that can effectively extend compliance dates for issues that are not deemed to pose an immediate threat to health or the environment.

As reflected by the comments, effective dates are of most concern for compost facilities operating under Section 220. All *new* facilities must comply with requirements on the effective date of the final rule. Existing facilities are given time to comply. The agency revised the effective dates in the final rule from a number of months after the effective date (for example, twelve months after the effective date) to fixed dates, which should be easier to work with. Effective dates for different provisions are December 31, 2013, June 30, 2014, and December 31, 2014.

Effective dates are not relevant for three subsections of the rule that are not applicable to compost facilities: WAC 173-350-220(2), *location standards*, (5) *groundwater monitoring*, and (7*) financial assurance*.

Compost facilities must comply with the operating requirements of WAC 173-350-220(4) and the closure plan requirement of WAC 173-350-220(6) by June 30, 2014. Closure plan requirements

under subsection (6) are minimal. Ecology believes the most significant requirement of subsection (4) is the Plan of Operations, which is a comprehensive document. Facilities will also need to revise sampling and analysis procedures. Composters should already have a plan of operation as well as a sampling and analysis plan in place, and will have more than a year to update those plans.

Subsection (3) contains design standards that are applicable to new facilities and existing facilities that are upgrading. Ecology expects the impact on existing facilities to be minimal except possibly where improvements are needed to control observed performance problems (for example, contaminated surface water runoff). In case of known environmental impacts, extending the time for compliance is not in the best interest of the public, the environment, or organic waste management overall; however the final rule gives facilities twenty months until December 31, 2014 to put necessary improvements in place.

Where any *significant* changes are needed to comply with new or updated sections of the final rule, WAC 173-350-220(030)(2)(c) requires a facility to initiate the permit modification process by December 31, 2013. The rule does not require that all necessary changes be in place by December 31, 2013, or that a new permit be issued, only that the facility *initiate* the necessary permit modification process and describe how the required changes can be made by the latter dates (June 30, 2014 or December 31, 2014) as applicable.

WAC 173-350-220(8) addresses the contents of permit applications. Those requirements are applicable with the submittal of a permit application. Note, however, that the closure plan requirement is not in effect until June 30, 2014, so a permit application submitted before that date would only need to reflect a commitment to meet the deadline. The requirements of (9) for construction records apply only after physical upgrades are made.

Definitions and Terms

This section includes comments on definitions and other terms not defined in the regulation. ***Ecology's response follows each comment below.***

Definitions

Bulking Agent and Wood Waste

Comment: "Bulking agent" – includes "clean wood waste" but there is no definition for "clean wood waste" only for wood waste. What constitutes "clean wood waste"? Could "wood waste" as defined be considered a bulking agent? Bulking agents don't appear to be counted as part of the new "capacity" definition.

Deatherage, Barr-Tech

Response: Ecology removed 'clean' from the definition of bulking agents, and clarified that bulking agents are a part of capacity in the "capacity" definition.

Comment: I have a comment regarding the definition of Bulking agent vs Wood waste:

"Bulking agent" means an ingredient used to improve structure and porosity, or to lower moisture content, primarily in composting. Bulking agents improve convective air flow and reduce settling

and compaction. Bulking agents may include, but are not limited to, clean wood waste, straw, and other high-carbon materials.

"Wood waste" means solid waste consisting of wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, construction, demolition, handling and storage of raw materials, trees and stumps. This includes, but is not limited to, sawdust, chips, shavings, bark, pulp, hogged fuel, and log sort yard waste, but does not include wood pieces or particles containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol, or copper chrome-arsenate.

Our company uses "clean wood waste" in the composting process as a bulking agent. This material is generated mainly by landscapers and from various construction projects. I wanted to make sure there is a clear difference between the use of raw, un-manufactured wood such as stumps and trees, versus the wood waste definition (mentioning "trees and stumps"). During the presentation, Dawn mentioned that a plan will need to be in place to reject feedstocks with >5% contamination. We know that the wood we use as bulking agent is not "wood-waste", but trees and stumps that come from a construction company or any type of "construction project" could be categorized as "wood waste" the way I currently read these two definitions.

Bajsarowicz, Pacific Topsoils

Response: See below.

Comment: To clarify a little – we primarily use what can be called "land-clearing debris" which consists of un-processed, non-dimensional, woody material (tree trunks, large branches, stumps, etc) as a bulking agent.

Bajsarowicz, Pacific Topsoils

Response: See below.

Comment: As currently written, the definition of bulking agents includes clean wood wastes:

"Bulking agent" means an ingredient used to improve structure and porosity, or to lower moisture content, primarily in composting. Bulking agents improve convective air flow and reduce settling and compaction. Bulking agents may include, but are not limited to, clean wood waste, straw, and other high-carbon materials.

Although wood wastes have always been defined as part of Type 1 feedstocks, we are concerned with the use of dimensional (processed woods) used in compost. It is very difficult to insure only unprocessed (chemical and bonding agent free) wood is used as part of the feedstock. We accept both the clean dimensional wood waste and wood waste used as wood derived fuel, although neither is used in our composting process. Much of this material is hard to distinguish, and will inadvertently make its way into the feedstock. A clear definition of "clean" (which we assume means only untreated, dimensional cuttings) and a procedure to insure only the "clean" materials are used will be important.

Bajsarowicz, Pacific Topsoils

Response: Wood waste and wood derived fuel are both defined in the rule, and bulking agents include wood waste, but not wood derived fuel. Ecology removed the reference to 'clean wood waste' to eliminate confusion. Trees, stumps, branches and other woody materials are all forms of wood waste as defined. Some composters and some permits do not allow any dimensional lumber to be used as feedstocks.

Controlled Conditions

Comment: On page 6, "Controlled conditions" means the conditions in which facilities must be operated to meet the performance standards of WAC 173-350-040 and the applicable handling standards of this chapter. Controlled conditions at compost facilities may include, but are not limited to, controlling odors, run-on and runoff control, moisture levels, pH levels, carbon to nitrogen ratios, temperatures, oxygen levels, particle sizes, and free air space. Add the word "control" following "run-on and runoff…"

Pon, Public Health - Seattle & King County

Response: The word "control" was not added to the final rule. The word "controlling" that precedes the word "odor" applies to the entire list.

Feedstock (see Organic Materials)

Comment: "Organic materials" versus "organic feedstocks"- these two definitions are interchangeable with respect to the composting regulations and confuse the requirements. A more thoughtful approach to terminologies should be used. In Table 220A "Organic Materials" is used but should be "Organic Feedstocks"

Thomas, Terre-Source

Response: The terms are not interchangeable. Not all organic materials will be used as feedstocks, so both definitions were included. Table 220-A was modified to use the term "organic feedstocks" instead of listing different feedstocks in (1) and (2) in the Organic Materials column.

Comment: "Feedstocks" – Are bulking agents, as defined, considered feedstocks?

Deatherage, Barr-Tech

Response: Bulking agents are a type of feedstock, and bulking agents have been added to the definition of capacity.

Garbage

Comment: 173-350-100 Definitions. We suggest adding the following to the definition of Garbage (this is the definition in King County Code Title 10 Solid Waste (10.14.020 NN)): "Garbage" means ((~~animal and vegetable waste resulting from the handling, storage, sale, preparation, cooking, and serving of foods~~)) all putrescible waste, except the following:

1. Organics that have been source separated for the purpose of recycling,
2. Sewage; and
3. Sewage sludge.

To the general public, and even to most solid waste professionals, the term "garbage" is used to refer to material that has not been segregated for recycling or composting. There is no reason for WAC 173-350 to contain a definition of garbage that is inconsistent with the generally accepted usage of the term and that is duplicative of the "putrescible waste" definition already included in WAC 173-350. The proposed revision by Ecology also would result in sewage and sewage sludge being considered to be garbage.

In our review of all references to "garbage" in 70.95 RCW and 81.77 RCW, we could not find any case where the intent of the regulations or statutes would be affected by limiting the definition of garbage to non-segregated putrescible solid waste.

McLaughlin, King County Solid Waste

Response: We will review the definition of garbage in a future rulemaking with input from a larger stakeholder body, but it was not deemed appropriate to do so under the limited context of this process which did not address the entire regulation. The revised definition is a simplified version of the previous definition and is in line with one of the two primary definitions found in popular dictionaries.

Manufactured Organics

Comment: Manufactured Organics means "*source separated solid wastes, such as non-plastic coated paper plates, cups, compostable bags, and other items designed to decompose through composting, anaerobic digestion or through other organic materials recycling processes. Manufactured organics do not include physical contaminants such as plastics and coated paper products that will not readily decompose under typical composting conditions, or wood derived fuel or wood waste as defined in this section.*"

We recommend the term "source separated *materials*" be used rather than "source separated solid wastes" in reference to the non-plastic coated paper plates, cups, compostable bags and other items.

Croll, Seattle Public Utilities

Response: The term 'solid waste' was kept in the final rule. Solid wastes may be materials, but not all materials are solid waste, so the original language is more accurate.

Nuisance Odor

Comment: (B) A progressive odor management plan that must include a description of facility and operational improvements that could be made if nuisance odors are identified beyond the facility's property boundary, as determined by the jurisdictional health department, the department, or the air authority. The description must address the receiving, composting, curing, and storage areas of the facility. Facilities will have eighteen months after the effective date of this chapter to complete the progressive odor management section of their plan of operation; also,

"Nuisance odor" means any odor which is found offensive or may unreasonably interfere with any person's health, comfort, or enjoyment beyond the property boundary of a facility. …

Speaking about these two items taken together: The definition of a nuisance odor is too open to subjective judgment. There is no definitive definition of an odor. How can we quantify odors so that there is a science based method to determine when odors are a problem before we cost these facilities a lot of money? There has been some work done in this area - see attached documents. Citation follows: H. Kim, L. L. McConnell, P. Millner. *Comparison of Odorous Volatile Compounds from Fourteen Different Commercial Composts Using Solid−Phase Microextraction*. *Transactions of the ASAE*. Vol. 48(1): 315−320. American Society of Agricultural Engineers, 2005.

Silvestri, Yakima Health District

Response: This definition is an existing definition in the rule. No changes were proposed to the definition, and no changes were made in the final rule. Odor studies are currently underway to better quantify odors. Agency note: two identical papers under two different titles were submitted to Ecology. We have cited the paper submitted.

Organic Materials (see Feedstocks)

Comment: Page 11, "Organic materials" means any solid waste that is a biological substance of plant or animal origin capable of microbial degradation. Organic materials include, but are not limited to, manure, yard debris, food waste, food processing wastes, wood waste, animal manure, and garden wastes. How does animal manure differ from manure? Manure is defined and includes the feces from herbivorous animals.

Pon, Public Health - Seattle & King County

Response: Ecology removed the second reference to "animal" manure from the list.

"On-farm"

Comment: "On-farm" means activities taking place on any agricultural land under the control of the same entity including parcels that are not geographically contiguous but managed by the same entity for agricultural production.

Lands identified within a farm management plan for digestate application may not be technically managed for agricultural production by the same entity. I do not have a recommendation for revision.

Bader, Environmental Health Services

Response: No changes were made to this term because it applies primarily to agricultural exemptions, and the restrictions are described in the section that applies to anaerobic digesters.

Representative Sample

Comment: WAC 173-350-100 "Representative sample" means a sample that can be expected to exhibit the average <u>properties</u> of the sample source.

In the proposed description the term properties is used without extent. We suggest refining the definition to include the scope of average properties of interest. For example:

"*Representative sample means a sample that accurately reflects the average chemical, biological or physical characteristics of interest from the source of feedstock, bulk material or compost batch in question.*"

We believe it is important to define the properties under review since a representative <u>sample</u> meant to exhibit the average properties of one constituent may not be the same as another (e.g. a representative sample for a microorganism analysis may be different from a representative sample for a moisture content analysis).

Wheeler, Lenz Earthworks

Response: Ecology believes that the definition captures the expectation that the sample is representative of all parameters, but will consider developing guidance if needed.

Yard Waste – Sod (Ecology's response follows the next few comments)

Comment: Yard Debris- means "plant material commonly created in the course of maintaining yards and gardens and through horticulture, gardening, landscaping or similar activities. Yard debris includes, but is not limited to grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit and vegetable garden debris. Yard debris does not include sod (a combination of grass roots, soil and rocks) or soil.

This definition was amended to exclude sod and soil. While it is common for yard waste collection programs to not accept sod, it is not clear to us if there is truly a problem with compost facilities processing sod for composting, if they have the right equipment. From a collection standpoint, our understanding is that sod was originally not included in yard debris curbside programs due to concerns about the weight of sod. Compost facilities might not accept sod if they don't have the right equipment, but is a rule restricting them from accepting sod necessary? Where should sod be delivered, and what are the benefits of it being delivered to a different type of facility for processing or disposal?

Jackson, Snohomish County Public Works

Comment: On pages 15 and 16, Yard debris is defined:

"Yard debris" means plant material commonly created in the course of maintaining yards and gardens and through horticulture, gardening, landscaping or similar activities. Yard debris includes, but is not limited to, grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit, and vegetable garden debris. *Yard debris does not include sod (a combination of grass, roots, soil, and rocks)* or soil.

Why is sod not a part of the yard waste? It appears that it would compost adequately using most methods of composting.

Silvestri, Yakima Health District

Comment: Yard Debris- means "*plant material commonly created in the course of maintaining yards and gardens and through horticulture, gardening, landscaping or similar activities. Yard debris includes, but is not limited to grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit and vegetable garden debris. Yard debris does not include sod (a combination of grass roots, soil and rocks) or soil.*"

This definition was amended to exclude sod and soil. Since keeping small amounts of sod and soil totally out of <u>incoming</u> yard debris material is probably impossible it should be amended to read "Yard debris does not include <u>large amounts</u> of sod or soil."

Croll, Seattle Public Utilities

Comment: Yard Waste – "means plant material commonly created in the course of maintaining yards and gardens and through horticulture, gardening, landscaping or similar activities. Yard debris includes, but is not limited to, grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit and vegetable garden debris. Yard debris does not include sod (a combination of grass roots, soil, and rocks) or soil.

Again we are unaware of any human health or environmental hazard presented by sod though large amounts of it may pose processing challenges that should be left to the facilities to address in their Operations Plans.

Corum, Washington Organic Recycling Council

Comment: What is the purpose of excluding sod from yard debris? This exclusion should not be made in the definition as sod is clearly a yard debris. If some compost facilities do not want sod, they can easily exclude it from their acceptance list. This should not exclude acceptance of sod if a facility is equipped for it

Thomas, Terre-Source

Response: Ecology removed the exclusion of sod from the definition of Yard Debris.

Terms Not Defined in Rule

Organic Conversion Technologies

Comment: Organic Conversion Technologies- WAC 173-350-225 "Other Organic Material Handling Activities" refer to "other conversion technologies" without there being a definition under WAC 173-350-100. A general definition should be developed such as an exemption for "other conversion technologies managing up to 3,000 gallons of liquid or semi-solid organic feedstocks on site at any one time listed under Table 225-A."

Croll, Seattle Public Utilities

Response: Ecology wants this term to capture emerging technologies, so we did not want a definition that would be too narrow and unintentionally exclude innovative ideas. The term may be defined in a future rulemaking.

Organic Waste-Derived Material

Comment: Substitute Senate Bill 5797 allows for "Organic waste-derived material" to be placed within permit exempt digesters. The Bill specifies "Organic waste-derived material" has the same meaning as defined in RCW 15.54.270 and any other organic wastes approved by the department, …

RCW 15.54.270 Definition:

(24) "Organic waste-derived material" means grass clippings, leaves, weeds, bark, plantings, prunings, and other vegetative wastes, uncontaminated wood waste from logging and milling operations, food wastes, food processing wastes, and materials derived from these wastes through composting. "Organic waste-derived material" does not include products that include biosolids.

This definition should be included within the proposed regulations and "Organic waste-derived material" should be included as acceptable feedstocks within Table 250-A (page 42).

Bader, Environmental Health Services

Response: The list of acceptable feedstocks for exempt agricultural digesters comes directly from RCW 70.95.330 and provides sufficient detail to inform stakeholders. Additionally 'organic waste

derived material' per that statute excludes "material collected through municipal commercial and residential solid waste collection programs" while the definition in 15.54.270 does not. Therefore including the definition from RCW 15.54.270 which overlaps with the definitions of yard waste, preconsumer food waste, and post consumer food waste in the solid waste rule would cause confusion.

Pads

Comment: In the rule subsections noted, the term *pads* should be further defined to include receiving, processing, and processing areas. Alternatively, pads could be described in the definitions section of the rule. WAC 173-350-220(3)(b)(i); WAC 173-350-250 (4)(a)(i).

Shanley, Waste Management

Response: The requirements for a pad in receiving and composting areas are described in the rule, so it was not necessary to define the term.

Facilities / Sites WAC 173-350-220(1)

Comment: Section 173-350-220 Composting facilities (1) Composting facilities – Applicability. Section (a) talks of "… *all facilities or sites*…" can the department include a definition that explains the difference between a site and a facility and then write the rule as it pertains to each? Can there be more than one facility on a site, or can there be more than one site on a facility or are they one in the same?

Deatherage, Barr-Tech

Response: Ecology removed the word 'site' from this phrase to avoid confusion. Facility is defined in the rule.

Curing WAC 173-350-220(3)

Comment: Section (3) Composting facilities - Design Standards (permit requirements).

Section (3) (f) states: "*Incoming feedstocks, active composting, and curing materials must be placed on pads that prevent contamination of soil or groundwater underlying or adjacent to the pads…*".

What is the definition of "curing"? Feedstocks and composting are defined but curing isn't. Why is curing included here? What does cured or uncured have to do with potential groundwater contamination? Recommend striking "curing" from this section.

Deatherage, Barr-Tech

Response: Curing is a common term used throughout the compost industry, and the benefit of curing compost is well accepted. Decomposing organic matter, including curing compost, is capable of producing high biological oxygen demand and high nitrate leachate, and therefore can impact ground and surface waters. Ecology did not define 'curing' but will consider adding a definition during a future rulemaking.

Commercial Fertilizer – Anaerobic Digestion WAC 173-350-250

Comment: Page 43, comment in Table 250-A in 3rd column under (c)(ii)

"(ii) Ensure digestate liquids or nonseparated digestate meets the conditions for a commercial fertilizer as applicable in chapter 15.54 RCW; or". This [commercial fertilizer] should be included in the definitions section (WAC 173-350-100).

Pon, Public Health - Seattle & King County

Response: Ecology does not regulate fertilizers. They are regulated by the Department of Agriculture. We defer to their definition; therefore it is not appropriate to define it separately in this regulation.

Compost versus Solid Waste

In the proposed and final rule Ecology modified language that applies to material stored at a compost facility. Prior to this change, compost that remained at a composting facility was not considered a solid waste once it met appropriate standards. Under the proposed rule and final rule, compost that has met standards must still be managed as a solid waste until it is used on site or distributed off site. Commenters had the following concerns:

- Finished compost is a product and should not be subject to regulation as a solid waste in any circumstance.
- Classifying compost as solid waste will mean that wherever it is used, any liquid issuing from it – surface water passing through on a site where compost is used in erosion control for example - would be considered leachate.
- Who would purchase a solid waste (as opposed to a product) because of the potential liabilities?
- Solid waste rules were not intended to regulate the storage and handling of commercial products.
- Asked what would happen to compost that fails one of the physical parameters, and suggested that there need to be markets for products with up to 2% physical contaminants.
- At least one commenter supported this change.

The agency response follows comments below.

Comment: Regulation of Finished Compost Expands Authority, and "Requirement to Sell Product" Ignores Market Realities

It has been settled policy that once a product is recycled, it is no longer considered a solid waste and therefore not subject to solid waste regulation. This rule change would continue to regulate finished compost, a recycled commodity.

Bartlett, Cedar Grove Composting

Comment: Page 29, Paragraph (C) Off pad storage of finished compost should be required to meet general performance standards under Section 040.

Brower, Kitsap Public Health District

Comment: If the composted material doesn't meet the Table 220-B "physical contaminants" or initial pathogen limits, there should be other options for reprocessing the material. The designation of composted material as a solid waste would not be appropriate.
Deatherage, Barr-Tech

Comment: Clarify that a final product that passes all compost quality tests is no longer a solid waste whether kept on site or moved off site

Corum, Washington Organic Recycling Council

Comment: We urge DOE to revise this language back to its original intent so that "composted material meeting the testing parameters of Table 220-B <u>are no longer considered a solid waste whether stored on-site or distributed off-site</u>." If this clarification is not made then who would buy compost for gardens, roadside applications or agricultural fields if potential liability exists from its being in contact with water and therefore a "leachate" generator for the property owner?

Corum, Washington Organics Recycling Council

We recommend that the wording of this section be revised to read *"When used on-site or distributed off- site, composted material meeting the testing parameters of Table 220-B are no longer subject to this Chapter* ***and therefore no longer considered a solid waste.***

Jackson, Snohomish County Public Works

Comment: Regulation of Finished Compost Expands Authority, and the "Requirement to Sell Product" Ignores Market Realities

Ecology's rule making reaches beyond the regulatory framework for the processing of compost, and enters into regulating a commodity- finished compost. The proposed rule also mandates that all of the compost produced be sold within three years, by limiting the storage of the finished product.

The proposed rule dramatically expands the scope of regulation under RCW 70.95. For over forty years, citizens, local governments and solid waste facility operators have understood that this regulation has been limited to solid wastes, not recycled products. The law and the implementing regulations in WAC173-350 were not intended to regulate the storage or handling of commercial products created by recycling. Until this proposal, they have never been extended to cover those commodities…

…The requirement to sell finished compost within certain time periods also ignores market realities. The evidence demonstrates that the sale of compost material is influenced by season, economy, and general market conditions. A restriction on storing finished product on-site could require facilities to close their doors to incoming materials from local governments, citizens and businesses, placing them in violation of contracts, and jeopardizing consumer participation in recycling efforts. This regulatory approach could result in the decline of composting activities in Washington State. It could result in materials being landfilled as an alternative means of achieving regulatory compliance. Using an environmental regulation to

reach into the private marketplace and regulate commerce is a major public policy change. Ecology has failed to demonstrate any environmental benefit to justify this dramatic regulatory reach.

Suggested amendments

- Delete all sections that extend regulatory authority to regulate finished compost or require the sale of this commodity within a certain time.

Bartlett, Cedar Grove Composting

Comment: What happens to composted material that fails one of the testing parameters such as the physical contamination test which really does not relate to human health concerns but more environmental concerns (placement of the contaminated material next to waterways)? Repeated screenings might fail to produce a composted material for the .1% film plastic threshold requirement. If that is the case, does that material have to be landfilled or can it be used in some restricted land application? DOE should give some guidance regarding "composted material" that remain in the solid waste category due to failing one non-human health related criteria.

Croll, Seattle Public Utilities

Comment: We are concerned about what happens to a composted material that fails one of the testing parameters such as the physical contamination test which really does not relate to human health concerns but more environmental concerns for particular applications, such as placement of the contaminated material next to waterways or for use in storm water management. Repeated screenings might fail to produce a composted material for the .1% film plastic threshold requirement. If that is the case, there should still be certain applications and markets that could accept a product with 2% physical contaminants. It doesn't seem reasonable that such a material would remain in the solid waste category and have no beneficial application. DOE should reconsider this and should also give guidance regarding "com posted material" that remain in the solid waste category.

Jackson, Snohomish County Public Works

Comment: Also, I would like just a clarification somewhere about temporary stock piles. When the product's finished, we sometimes will truck large quantities of it to a site for land application under the 590. And occasionally we'll get a complaint related to that because people think it's a new composting site or something else is going on there. And I just think that you know we'll sometimes stockpile up to ninety days in advance depending on the cropping system and weather and other things, but, maybe there should be some clarification that just insures that it meets the standards as finished compost, and it is a temporary site, it's for direct land application to the immediate locale. That just seems something that should be clarified.

Turner, Consultant, West Richland (Public Testimony)

Comment: 173-350-220(10) Finished compost must continue to be considered "not a solid waste" as in the current regulation. Compost improves water quality, reduces erosion, increases infiltration, etc. If finished compost cannot be considered "not a solid waste" any water or liquid contacting compost will be, by definition, leachate – including roadsides, gardens, lawns, agricultural fields. This will significantly impact the composting industry and Beyond Waste program efforts to divert this material from landfills.

Thomas, Terre-Source

Comment: Designation of Composted Materials (Permit Requirements) under WAC 173-350-220 (10}

This revised section reads "when used on-site or distributed on[*sic*] site, composted materials meeting the testing parameters of Table 220-B are no longer subject to this chapter. Composted materials that do not meet these requirements are subject to management under Chapter 70.95 RCW, Solid waste management- reduction and recycling".

The original section which this amends made it very clear that composted material meeting the testing parameters of Table 220-B shall no longer be considered a solid waste and shall no longer be subject to this chapter. We recommend that the wording of this section be revised to read *"When used on-site or distributed off- site, composted material meeting the testing parameters of Table 220-B are no longer subject to this Chapter* *<u>and therefore no longer considered a solid waste</u>*. There are quite a few potential issues if this is not clarified.

Jackson, Snohomish County Public Works

Comment: We agree that finished compost stored on site, including bagged material, must be managed for dust and nuisance odors. In this regard, the City supports the inclusion of finished compost as regulated solid waste and we assert that rules which allow enforcement of volume, nuisance odors and stormwater requirements are appropriate and reasonable, especially where finished compost is directly associated with and in close proximity to the manufacturing operation.

Nielsen, City of Marysville Public Works

Comment: Designation of Composted Materials or "When (if ever) is Compost Not a Solid Waste?" (WAC 173-350-220 (10).

This revision is extremely confusing and the original intent of the WAC here has been totally altered. The revision reads "When used on-site or distributed on site, composted materials meeting the testing parameters of Table 220-B are no longer subject to this chapter. Composted materials that do not meet these requirements are subject to management under chapter 70.95 RCW, Solid waste management-reduction and recycling".

We urge DOE to revise this language back to its original intent so that "composted material meeting the testing parameters of Table 220-B <u>are no longer considered a solid waste whether stored on-site or distributed off-site</u>." If this clarification is not made then who would buy compost for gardens, roadside applications or agricultural fields if potential liability exists from its being in contact with water and therefore a "leachate" generator for the property owner? Any product can readily become solid waste depending on how it is used, but finished compost should not be redefined as solid waste by implication. Doing so would be a substantial change in the intent of this WAC and plunge the organics recycling industry and all the jurisdictions that depend on it into legal uncertainty.

Likewise, the inclusion of finished compost in the regulatory realm of "solid waste" if kept on site, causes major concerns for our members who may have a long aging process for their compost prior to direct sale or bagging. They would now be obligated to collect all of the leachate from around finished compost piles meaning huge costs as far as installing or expanding leachate collection ponds, leachate treatment and the maintenance of these new systems.

Corum, Washington Organic Recycling Council

Comment: WAC 173-350-100. "Composted material" means organic solid waste that has undergone biological degradation and transformation under controlled conditions designed to promote aerobic decomposition at a solid waste facility in compliance with the requirements of this chapter. Composting is a form of organic material recycling. Natural decay of organic solid waste under uncontrolled conditions does not result in composted material.

"Composted materials" should not include "Finished Compost Product" that meets performance standards of this rule.

Finished Compost Product should be defined. The definition should include the performance standards of this chapter.

Wheeler, Lenz Earthworks

Comment: Section (10) Composting facilities – Designation of composted materials (permit requirements) If the composted material doesn't meet the Table 220-B "physical contaminants" or initial pathogen limits, there should be other options for reprocessing the material. The designation of composted material as a solid waste would not be appropriate.

Deatherage, Barr-Tech

Comment: WAC 173-350-220(10) (10) Composting facilities - Designation of composted materials (permit requirements). When used on-site or distributed off-site, composted materials meeting the ((~~limits for metals in Table A and the~~)) testing parameters of Table 220-B ((~~of this section, and having a stability rating of very stable, stable, or moderately unstable as determined by the analysis required in subsection (4)(a)(viii)(D) of this section, shall no longer be considered a solid waste and shall~~)) are no longer ((be)) subject to this chapter. Composted materials that do not meet these ((~~limits are still considered solid waste and~~)) requirements are subject to management under chapter 70.95 RCW, Solid waste management—Reduction and recycling

Language in the current version of WAC 173-350-220 includes a differentiation between "Composted Material" and "Finished Product". Finished Product that meets the performance standards of the rule is no longer subject to the conditions of this chapter. This is an important distinction and should be maintained. The marketing and sales viability of finished compost products rely on this distinction to instill consumer confidence in the beneficial nature of the product. Without this distinction compost could still be defined as a solid waste.

We recommend that the current language remain in the rule.

Wheeler, Lenz Earthworks

Comment: 173-350-220(10) Additionally, finished compost must continue to be considered "not a solid waste" as in the current regulations. Compost improves water quality, reduces erosion, increases infiltration, etc. If finished compost is not considered "not a solid waste" any water or liquid contacting compost will be, by definition, leachate – including roadsides, gardens, lawns, agricultural fields.

Dressel, North Mason Fiber

Comment: Rules that regulate how long yard waste, after it has been processed and turned into a marketable product, can remain on site goes against a long standing definition of solid waste. This expansion of the solid waste definition provides great concern to us as one of the largest recycling

processors in the State. Although we do not typically keep finished products on site for extended periods of time we do see the problems that can be created with such a requirement.

Proposed revision: Eliminate regulations governing the length of how long finished products may stay on site as this is outside the purview of the Department of Ecology.

Huycke, Republic Services

Comment: Designation of Composted Materials (Permit Requirements) under WAC 173-350-220 (10)

This revised section reads "*when used on-site or distributed on site, co posted materials meeting the testing parameters of Table 220-B are no longer subject to this chapter. Composted materials that do not meet these requirements are subject to management under Chapter 70.95 RCW, Solid waste management- reduction and recycling*".

The original WAC 173-350-220 (10) section which this amends made it very clear that composted material meeting the testing parameters of Table 220-B shall no longer be considered a solid waste and shall no longer be subject to this chapter. We strongly recommend that the wording of this amended section be revised to incorporate the original intent and read, "*When used on-site or distributed off-site, composted material meeting the testing parameters of Table 220-8 are no longer subject to this Chapter <u>and therefore no longer considered a solid waste</u>.*" If this is not clarified then there could be potential liability associated with the use of compost in any application ranging from gardening to erosion control, even if correctly applied due to the continued need for leachate and stormwater management required by the use of a material which is still classified as a "solid waste". We do not believe that DOE has this intention.

Croll, Seattle Public Utilities

Comment: Regarding WAC 173-350-220(10), the "Designation of Composted Materials," we urge the DOE to retain the original language that states "composting materials meeting the testing parameters of Table 220-8 are no longer considered a solid waste whether stored on-site or distributed off-site." We consider finished compost and biosolids compost to be market commodities, not solid waste destined for processing or disposal.

Good compost is essential for a variety of applications and markets including gardeners, landscapers, agriculture and those agencies who apply compost for erosion control. To ensure quality of the end product produced from materials we collect, we work to educate both our residential, commercial and Transfer-Station customers to prevent contamination of compostable material. We are working to promote the use of compost by making bagged, finished compost more available to our public and to promote the expansion of compost-end markets. We use these materials in our municipal land applications and erosion control efforts.

Because of our roles in the collection, production and use of organic materials, we urge the DOE to seriously reconsider regulating finished compost products as solid wastes. We also support the comments and recommendations of Washington Organics Recycling Council and the NW Biosolids Management Association.

Kato, City of Tacoma Public Works

Comment: Our specific concerns are relative to what may be an effort to "regulate" a finished product, such as garden mulch. That is, the Department seems to be proposing regulation of on-site storage of the finished product. This product is no longer solid waste, nor a "recyclable;" it is a

consumer item which will be shipped directly to the consumer, or to a retailer or wholesaler. At that point, it is beyond DOE's regulatory purview, and extension of that authority would not only be contrary to applicable laws and regulations, but would create an unwanted and unnecessary increase in price to the consumer.

Lovaas, Washington Refuse and Recycling Association

Comment: ..e were concerned at the time that although WAC 173-350-220 along with other solid waste rules could use some updating (particularly for anaerobic digestion technologies and topsoil management) focusing only on the composting part of the rule could cause more confusion (*see attached 4/8/11 letter*). Unfortunately, this has turned out to be the case with most of the current rulemaking process, particularly in regard to the blurring of the distinction of when compost is and is not a solid waste, a critical issue for maintaining a viable composting industry in Washington State.

> ***Referenced comment from April 8, 2011 communication: March 1, 2011 - Rule-making will continue:*** *The Director announced that Ecology will proceed with rule-making related to composting only in WAC 173-350, citing OFM exemption criteria 3 (e):*
>
> Although WAC 173-350-220 along with other solid waste rules could use some updating, focusing only on the composting part of the rule will cause more confusion. Other parts of the WAC 173-350 standard are very closely related to what occurs in section 220. By taking a piece meal approach, the Department is not likely to get scientifically based final rules that will integrate well with other sections. In addition, we believe other parts of WAC 173-350 such as those pertaining to anaerobic digestion and topsoil management standards are more critical to address in the near term.
>
> WORC requests the exemption for rule making for the composting section in isolation be withdrawn and that all rule making under WAC 173-350 be addressed at the same time.

Corum, Washington Organic Recycling Council

Compost vs Solid Waste - Ecology Responds

Response: Although there was strong opposition from commenters, the agency retained the proposed change in the final rule. Some comments reflect applicability outside the agency's intentions, and we want to clarify the intent of this change.

The agency reviewed underlying statutory authority in Chapter 70.95 RCW and consulted with our assistant attorney general. No basis in law was identified to argue that this change is outside the scope of the agency's authority. Stakeholders commented that even if the agency has the authority to make this change, it is still a bad policy decision.

Ecology regulates solid waste *facilities*. In implementing these rules through permits or administrative declaration, we want to avoid harmful impacts to other media. Compost facilities have the potential to impact air and water quality. We expect that most facilities are in compliance. To the extent incidents occur, in most cases they are brief and occasional, or if more serious, they are typically short-lived and can be corrected.

The scope of organic material collection and processing has grown dramatically since the current rules were adopted. The goal of good solid waste management is to prevent adverse environmental impacts and ensure responsiveness to correct them when they do occur. Stored piles of organic material can generate leachate or odors. The agency needs to consider the physical realities of an entire site. Compost facilities are solid waste facilities and the entire site is subject to regulation, including finished materials that may still be decomposing, and may still at some point have an offsite impact.

Under the final rule, the condition of not being a solid waste occurs after 1), a compost product passes applicable standards for physical contaminants, pollutants, pathogens and other parameters, and 2) it is used on site (likely a limited opportunity, but possible), *or* distributed off site. Once both of these occur, the "product" is no longer a solid waste. Concerns that roadside erosion control projects, gardens, or lawn and garden centers are managing solid waste and producing leachate are put to rest if the product meets standards for finished compost when it is removed from the compost facility.

The effect of this change is to ensure that Ecology and jurisdictional health departments can exercise appropriate permitting and enforcement authorities for an entire site. The agency does not agree that finished compost has no capacity for offsite impacts, or that areas from which those impacts may occur should somehow be off limits to appropriate expectations of the solid waste permit process. The performance requirements of WAC 173-350-040 remain in effect for areas where finished product is stored. The rule does not require the collection of leachate or construction of pads, etc. for areas where finished product is stored as long as there are no off site impacts.

Commenters asked what would happen to compost that fails to meet standards. Would it have to be landfilled, or could there be another use for that product? Options for compost that fails standards are landfilling or reprocessing to meet standards. Ecology is aware that composters were particularly concerned with standards for physical contaminants, especially the secondary criteria for film plastic. This matter is discussed in the section on Physical Contaminants.

Operational Issues

Ecology responds following each question below.

Comment: In the cited rule subsection, WM suggests additional language after the sentence: *Aerated static pile must have a cover to ensure that pathogen reduction temperatures are reached and vectors are controlled.* We would recommend adding: "Cover can be a synthetic material or a layer of already processed material such as screened overs." **WAC 173-350-220(4)(a)(vii)(B).**

Shanley, Waste Management

Response: The final rule says "such as" a synthetic cover or layer of finished compost. Overs would also be acceptable, but operators should be mindful of the standard for physical contaminants.

Comment: Page 28 (vii) (B) – Language should be added that indicates an aerated static pile need to be turned or that some other method is employed to assure that pathogen reduction temperatures and complete composting occurs throughout the entire pile. Without turning or mixing areas at the edge of the pile might not be composted completely.

Starry, Thurston County Environmental Health

Response: Windrow piles are turned for the reason the commenter notes, but static piles rely on proper insulation. The commenter is correct that achieving temperature throughout the pile is important.

Comment: 220(4)(f)(iii)(D) "grinding to reduce the size of physical contaminants does not meet the requirements of this section"

I fail to see how this pertains or is needed for composting. The contaminant requirement is by weight. Grinding does not apply. This should be removed.

Thomas, Terre-Source

Response: Grinding would make the contaminants smaller; however they would still be in the compost. The agency does not want size reduction to be the relied upon means of meeting the standard for physical contaminants. That being said, relatively few contaminants are going to pass through the 4mm sieve size that is standard for this test under the U.S. Compost Council's methods.

Comment: 173-350-220 (4) Composting Facilities- Operating Standards (permit requirements): (f) pg 33 through (F)pg 34 Mass balance calculations - needs to be deleted as it has no realistic bearing on the composting process. Composting is not a mathematical calculation, yet a process affected by factors such as seasonality, feedstocks, and diversion rates. As successful composters, our operations adapt to these changing variables and a myriad of other conditions. An arbitrary calculation such as mass balance could actually enable inappropriate processing based on certain conditions.

Snyder, Waste Connections

Response: The reference to mass balance was existing language. Ecology replaced it with a less technical requirement**.**

Comment: Page 33 (vi)(i) – rewrite the last sentence to say the feedstock must be approved by the permitting agency.

Starry, Thurston County Environmental Health

Response: The language was not revised. As a matter of cooperation, Ecology would not approve a feedstock that would ignore or controvert the authority of the local health department.

Capacity and Throughput

The following comments are on Capacity and Throughput. Some stakeholders asked for clarification; others had specific recommendations or concerns. Most comments fell into the following areas:

- What materials are included in definitions for wood waste/bulking agents and finished compost (see Definitions and Terms section for more comments)
- How or where will capacity and throughput be measured and in what units
- Potential ramifications from including capacity or throughput in permitting
- Need for capacity limits to reduce odors.

Ecology's response follows stakeholder comments

Comment: Remove "capacity" references because composters already have capacity permits issued from air and health regulators.

Bartlett, Cedar Grove Composting

Comment: Change the definition of "capacity" so that it does not include materials imported to the site to help with odor control (such as woodwaste) and finished compost product.

Corum, Washington Organic Recycling Council

Comment: 173-350-220 (4) Composting Facilities- Operating Standards (permit requirements):(iii) A description of how wastes and organic materials including incoming feedstocks, composting, curing, and composted materials are to be handled onsite during the facility's life, including:

> (A) Maximum capacity in cubic yards for all materials on-site at any one time. The jurisdictional health department may require cumulative capacity for materials or separate capacities for incoming feedstocks, composting, curing, and composted materials, or·any combination;
> (B) Throughput in tons or cubic yards of solid waste feedstocks processed in a given amount of time. The jurisdictional health department may require monthly or annual throughput;
>
> > By Ecology's own definition of Capacity WAC 173-350-100 includes "all material" including "composted materials" and bulking agents (according to Dawn Marie-Maurer Ecology representative at public Hearing) within a limited capacity of a site. However, composters are encouraged to use large volumes of woody bulking materials onsite as a critical part of their operations. We do not believe, Ecology has proven that bulking agents contribute to the areas of concern addressed by this rule, and bulking agents should not be included in the throughput or capacity calculations for the facility. This same concern was registered to Ms. Kathleen Scanlan in our letter dated March 28, 2012 during the public comment period for the draft of this same rule.

WAC 173-350-100 Definitions. Capacity. By including composted materials "finished product" into the definition of capacity, many burdensome criteria are triggered throughout the rule. As previously mentioned in our correspondence to Ms. Scanlan on March 28, 2012, once composted material passes the testing requirements and is now a product, it is no longer a solid waste and should no longer be subject to the chapter. Therefore, sections such as Design Standards (e) to treat all run-off, of product piles as leachate is costly and an unfair business advantage to those that are not subject to the same solid waste standard. Finished product storage at any location should then be subject to the rules of solid waste storage i.e.; wholesale and retail yards, etc. Therefore, to remedy the situation, as stated previously, finished compost is not a solid waste and should not be regulated under this Washington Administrative Code.

Snyder, Waste Connections

Comment: As such, the rules should address distance and proximity of the finished product to the manufacturing process and in such cases where they are within a certain distance of one another

the total volume of materials allowed on site should include the raw materials, all material at various stages of processing and finished product.

Nielsen, City of Marysville Public Works

Comment: Section (b); talks of "material on-site at any one time" includes feedstocks, active composting curing piles and composted materials…" It doesn't list "bulking agents" but does include "bulking agent" in Table 220 - A. Would this include "wood waste" ground for other purposes, not intended for composting?

Deatherage, Barr-Tech

Comment: "Bulking agent" – includes "clean wood waste" but there is no definition for "clean wood waste" only for wood waste. What constitutes "clean wood waste"? Could "wood waste" as defined be considered a bulking agent? Bulking agents don't appear to be counted as part of the new "capacity" definition.

Deatherage, Barr-Tech

Comment: "Capacity" – Needs to be defined in "tons or cubic yards" to be consistent with the "throughput" definition. Capacity doesn't appear to include stockpiled bulking agents.

Deatherage, Barr-Tech

Comment: On Page 14, Throughput is defined as:

"Throughput" means the amount of feedstocks in tons or cubic yards that a solid waste facility processes in a given amount of time, such as a calendar year. Throughput is identified by the conditions of exemption, the permit, or the plan of operations as approved by the jurisdictional health department or the department.

At what point, in regards to a composting site, does the material become throughput as opposed to being in process? Have curing piles made it through the operation or do they need to leave the site first? Is finished compost, stockpiled for sale, considered throughput or does it need to leave the site first?

Silvestri, Yakima Health District

Comment: 173-350-100 Definitions-Capacity. Including "All materials" including "composted materials" and bulking agents (per Dawn Marie-Maurer/Ecology) within a limited capacity of a site is counter productive to effective composting. Ecology should be encouraging large volumes of woody bulking materials on site at all times because of their critical role in minimizing odors, soaking up moisture, and biofiltration of odorous processes and materials.

Dressel, North Mason Fiber

Comment: Capacity - means "*the maximum amount of material that can be contained. Capacity is identified by the conditions of exemption, the permit or the plan of operations as approved by the jurisdictional health department. All material includes, but is not limited to, incoming waste, feedstock, stockpiled wastes, active composting, curing piles, composted materials and sorted recyclable materials on-site."*

This definition should be amended to read "the maximum amount of material that can be contained *on site at anv one time as measured in tons or cubic yards "*. More clarity is also needed as to the applicability of the term "capacity". Is it meant to apply only to a standalone composting or anaerobic digestion facilities, or also to apply to an industrial property which may have one or more anaerobic digestion tanks associated with different activities taking place on the property?

Composted Material- The "capacity" definition includes finished product which has undergone compost quality testing and is awaiting bagging or bulk sale distribution. We would expect that the limit for the maximum amount of material on site would allow for situations where some product inventory may need to be stored longer than normal due to economic downturns or delays with specific project applications.

Clean Wood - Why would clean wood waste delivered to a composter for use as bulking agent, an important function to maintain aerobic composting and possibly even odor control, be counted under facility capacity? Facilities should not be discouraged from having an ample supply of bulking agent on site to mix with spring/early summer grass. Also, wood waste delivered to the composting site, might be used to serve other end market such as mulch or chipped boiler fuel. Composters should not have their ability to serve these different end markets be constrained due to a limitation on overall site "capacity" when such a limitation does not currently apply to wood waste processors who may be classified as "permit exempt" under WAC 173-350-210 Recycling.

Croll, Seattle Public Utilities

Comment: 173-350-100 Definitions-Capacity. Including "All materials" including "composted materials" and bulking agents (per Dawn Marie-Maurer/Ecology) within a limited capacity of a site is counter productive to effective composting. Ecology should encourage large volumes of woody bulking materials on site at all times because of their critical role in minimizing odors, soaking up moisture, and biofiltration of odorous processes and materials. Including a capacity requirement on finished compost will artificially inflate the capacity estimates of facilities across the state. Additionally, limiting the ability to mature large volumes of compost at a compost facility when necessary to a) increase the value of compost products, b) wait out a low value market, or c) wait out a low sales season will significantly impact the ability of a composter to operate in an economically viable manner[1].

[1] Washington state has developed a composting industry that relies on both tipping fees and finished product sales for the economic viability of a facility. This regulation would shift that reliance onto the tipping fee almost exclusively. Several impacts could be expected due to that shift: 1) tipping fees must increase which closes the gap between composting and landfill costs which will result in more organic materials being landfilled. 2) compost sales prices will fall resulting in under valuing of compost. In the short run more compost may be sold. But people do not value what they do not pay for. In the long run, product quality will suffer, people will not have confidence in the quality and will use less compost resulting in more compost landfilled and/or used as daily cover in landfills or other less than 'highest and best' uses.

Thomas, Terre-Source

Comment: The City also notes that the proposed Standards do not define an upper limit to the amount of compost which can be stored at a facility at any given time. The City strongly urges that an upper limit measurable in cubic yards or tons be included in the standards. Such a limit will

reduce the likelihood of odors leaving the property and adversely impacting the surrounding communities.

Nielsen, City of Marysville Public Works

Comment: WAC 173-350-100 Definitions - "Capacity" We contend that "composted materials" should be struck from the definition of "Capacity". Due to unforeseen economic forces, there may be periods when composters are unable to meet their sales targets and have no other alternative other than to stockpile finished product. If stock piled finished compost is included in the calculation of the total amount of material that can be contained on a given site, the ability for a composting facility to accept unprocessed feed stocks from the region's residents and businesses will be accordingly reduced or even periodically eliminated.

MacGillivray, City of Kirkland

Comment: Page 21, Paragraph (c)(vi)(C&D) Units for incoming feedstocks (C) and outgoing materials (D) should be the same so that JHA may accurately assess compliance with throughput quantities.

Brower, Kitsap Public Health District

Comment: Capacity- We support the intent of this definition and the inclusion of all material, including finished composted material in the definition of "capacity" with a hopeful outcome being to move materials off-site faster. It is not clear if the new definition includes wood waste on-site that will be used as a bulking agent. If it does, we can't see a benefit to this inclusion and suggest an amendment such as "clean wood waste to be used as a feedstock is not included in the definition of capacity."

McLaughlin, King County Solid Waste

Comment: Throughput- means "*the amount of feedstocks in tons or cubic yards that a solid waste facility processes in a given amount of time, such as a calendar year. Throughput is identified by the conditions of exemption, the permit, or the plan of operations as approved by the jurisdictional health department or the department*".

This definition could be further clarified to mean "the amount of incoming feedstocks in tons or cubic yards that a solid waste facility processes in a given amount of time, such as <u>daily, monthly or</u> in a calendar year"

Croll, Seattle Public Utilities

Comment: Finally, it is totally unclear what the definition of "capacity" refers to – "*the maximum amount of material that can be contained*" where? We assume it pertains to within the boundaries of a permitted or unpermitted composting facility but could it also pertain to an institution or industrial facility that may have multiple anaerobic digestion unit tanks?

Corum, Washington Organic Recycling Council

Comment: 1) Capacity- "*means the maximum amount of material that can be contained. Capacity is identified by the conditions of exemption, the permit or the plan of operations as approved by the jurisdictional health department. All material includes, but is not limited to,*

incoming waste, feedstock, stockpiled wastes, active composting, curing piles, composted materials and sorted recyclable materials on-site.

This new definition is extremely problematic and counterproductive to the goals of good composting site environmental management as well as local and State recycling goals. It includes clean wood waste used as a bulking agent for aerobic composting and odor control. Why would a regulator want to limit the amount of clean wood or land clearing debris imported to the facility for these necessary operations?

It also includes composted material that has been tested and approved as passing all of the required compost quality tests for a finished compost product. The inclusion of this finished product left on site now under a definition of "capacity" means that it is still considered a solid waste. Does DOE have evidence that bags of finished compost or piles awaiting bagging or final sale contribute to odor or toxic air emissions? Where is the evidence to support this assumption? This regulation of final product, which should be outside of the regulatory solid waste realm, has negative implications even for permit exempt facilities which might have the timing of sales that do not neatly fit the new capacity definition or requirement for 50% of the final product to be sold in a certain period of time.

Corum, Washington Organic Recycling Council

Comment: WAC 173-350-100 "Capacity" means the maximum amount of material that can be contained. Capacity is identified by the conditions of exemption, the permit, or the plan of operations as approved by the jurisdictional health department or the department. <u>All material includes, but is not limited to</u>, incoming waste, feedstocks, stockpiled wastes, active composting, curing piles, composted materials, and sorted recyclable materials on-site.

Materials such as clean wood and bulking agents do not meet the definition of a solid waste and therefore should not be included in the definition of capacity. This distinction should be clearly stated.

Wheeler, Lenz Earthworks

Comment: The Woodland Park Zoo is nonprofit organization currently composting herbivore manure and bedding materials as part of our commitment to waste reduction, resource conservation and public education. The zoo's composting facility operates under a conditional solid waste permit exemption producing less than 1000 cubic yards of compost annually. Our program successfully sells all of our compost annually, typically within 6 months of production during our spring and fall sale events.

I am concerned about redefining the term "capacity" as inclusive of both finished compost and all other materials on site including but not limited to curing piles, active composting, feedstocks, and bulking agents (WAC 173-350-100). Presently it is possible to produce and sell less than 1000 cubic yards of compost annually but to periodically have more than 1000 cubic yards of material on site before the beginning of each six month sale. The proposed definition of "capacity" would force a reduction of materials on site either through reducing volumes of feedstocks and producing less compost or finding new sales markets. Either option would result in increased costs. Reducing our feedstock would result in tipping fees for disposal and loss of income. Compost is typically sold seasonally in the spring and fall when compost is best applied. Costs would be incurred in locating and securing new markets to purchase finished product during the off seasons.

Not only would the change result in economic harm to our organization but the ecological advantages are unclear. If feedstocks are transported and disposed elsewhere then the carbon footprint for those materials will increase. If product is sold out of season it would likely still be stockpiled until the spring or the fall but off site without the benefits of monitoring and storm water protection.

I strongly encourage the Department of Ecology to remove "finished compost" from the list of materials included in the definition of "capacity" or to consider other options such as raising the capacity level to match the volume of feedsocks needed to produce both 1000 cubic yards of compost and 1000 cubic yards of finished compost. Doing so would support the Woodland Park Zoo's efforts to be both economically and ecologically sustainable.

Corum, Woodland Park Zoo

Comment: Maximum capacity required for "all materials on-site" including finished compost and bulking materials. This simply inflates the current capacity estimate. Either regulate 'capacity' or 'throughput'. Limiting both concepts un-necessarily restricts innovation and effective, creative solutions to recycling organic materials and keeping them out of the landfills.

Thomas, Terre-Source

Capacity and Throughput – Ecology Responds:

Capacity, in reference to permitting and exemption criteria, is the limit of all material that the facility can hold, not just a portion of the facility. Capacity is based on an approved plan of operations where the receiving area, size and number of active compost piles, curing piles, and finished compost piles are all taken into consideration, as is the length of time needed to store material prior to sending it to market. Since both bulking agents and finished compost take up space, they are integral to the calculation of capacity.

Capacity will be calculated based on the physical limits of the site and the operation and approved by the jurisdictional health department. Bulking agents have to be part of the equation simply because they take up space and will affect the amount of feedstock that can be properly stored and handled in a limited area. Including bulking agents and finished compost as part of capacity is not new. Most exempt facility categories in the 2003 rule had capacity restrictions, and these restrictions applied to "all material on-site" including "feedstocks, partially composted feedstocks, and finished compost" [WAC 173-350-220(1)(b)(vi) 2003]. Finished compost is included because it both takes up space and because all decomposing organic materials on a site, including finished compost, are capable of emitting odors. While the earthy aroma of finished compost may not be offensive to many, these piles are not odorless and contribute to a facility's air emissions, so finished compost needs to be considered when assessing the appropriate capacity for a site.

Clarifying that bulking agents are a feedstock and therefore a component of capacity is also not a change. Wood waste and agricultural crop residues, the most common bulking agents, were listed under the definition of Type 1 feedstocks in the 2003 rule. The definition of wood waste in WAC 173-350-100 clearly states that it is a solid waste.

While permitted compost facilities under the 2003 rule were not required to have capacity identified in the permit, many health departments did include capacity. Some permits used the word 'capacity' to mean either everything on site at once, or everything that the facility can accept in a given period of time, often a year. By adding definitions for 'capacity' and 'throughput', Ecology is clarifying the two different concepts and standardizing use of the terms. Capacity and

throughput are measured in any units approved by the JHD, or conditions of exemption such as cubic yards, tons, or gallons.

Throughput is the amount of material that can be accepted by the facility (come through the gate) in a given amount of time, for example, a month or a year. Throughput is calculated based on an approved plan of operation assessing how many active compost piles the facility will have, how much material each pile can hold, and how long the material stays in the pile before being moved. These parameters determine how much the facility can take in each day/week/month/year without violating the terms of their approved plan of operations or the conditions of exemption. The point of compliance for throughput is always the gate – how much material the site can accept in a certain period of time.

The Department made some changes to the rule language based on stakeholder comments.

- Removed the word 'clean' from the reference to woodwaste and clarified that bulking agents are part of capacity in the definition.
- Slightly increased the capacity for the smallest permit exempt facility types.
- Standardized the lower threshold for notification and reporting for composting, anaerobic digestion, and other forms of solid waste handling to 25 cubic yards or 5,000 gallons.

While Ecology received comments that the rule should dictate capacity limits for permitted facilities, we believe this should remain a decision of the jurisdictional health department based on foot print, process, and successful performance.

We received one comment that incoming and outgoing materials should be measured in the same units (tons vs. cubic yards for instance). However, as volume is lost during the composting process, a facility will have somewhat less product than the raw feedstocks they received, so these values are not equivalent. Additionally, we received earlier stakeholder input wanting more flexibility in reporting units, so Ecology did not adopt this suggested change.

Requirement for Turnover of Inventory

Ecology proposed to require that at least 50% of composted material stored on site be used within one year, and that 100% would be removed at least every three years. Most commenters opposed the proposed requirements for turnover. Ecology's response follows comments that expressed the following concerns:

- Some commenters argued that older compost is better compost.
- Commenters pointed out that market demands are dynamic and the amount that can be removed from a site in any year or period will vary in response to the market.
- In opposition to other viewpoints, one commenter felt that three years was an overly long period to allow for onsite storage.
- Another recommended that we include some mechanism to assess compliance with the requirement for certain exempt facilities.

The agency response follows comments below.

Comment: Page 21, WAC 173-350-220(1)(c)(v) additional text suggestion:

(v) ((Conduct an annual analysis, prepared in accordance with the requirements of subsection (4)(a)(viii) of this section, for composted material that is distributed offsite from categorically exempt facilities described in subsection (1)(b)(vii) through (ix) of this section.)) Ensure that at least fifty percent of the composted material on-site is used within one year and composted material is not stockpiled for more than three years (documented through annual reporting as required in Table 220-A and section (1)(c)(vi));

Add (documented through annual reporting as required in Table 220-A and section (1)(c)(vi));

Pon, Public Health - Seattle & King County

Comment: Regulation of Finished Compost Expands Authority, and "Requirement to Sell Product" Ignores Market Realities

Ecology's limit on product storage interferes with market realities and will potentially incur significant reductions in sales revenues for the composting industry.

Bartlett, Cedar Grove Composting

Comment: WAC 173-350-220 Composting Facilities (c) (V). It is unclear why a facility must ensure that ... "composted material is not stockpiled for more than three years." Compost is a material which clearly improves with age and the potential that this desirable material could be landfilled by composting facilities after the expiration of the three year time limit is a serious concern.

MacGillivray, City of Kirkland

Comment: Delete all sections that extend regulatory authority to finished compost on site or require the sale of this commodity within a certain time period.

Corum, Washington Organic Recycling Council

Comment: Although the proposed regulatory language also now specifies that finished compost cannot be stockpiled on site for more than three years, we view three years as an overly long period for such on-site storage and would advocate for reducing that maximum length.

Nielsen, City of Marysville Public Works

Comment: Additionally, compost improves with maturing time. Requiring 50% of the product from an exempt facility to be removed within 1 year could seriously limit the quality of the finished compost that facility could produce – which in turn may limit its sales and certain reduce that price that the product could bring.

Corum, Washington Organic Recycling Council

Comment: What is the purpose of requiring 50% of material to be "used" w/in one year? Compost improves with age. I encourage longer curing time for many types of compost and several clients 'age' their high value compost for over 2-years to achieve the high quality parameters in their products

Thomas, Terre-Source

Comment: Ecology's rulemaking reaches beyond the regulatory framework for the processing of compost, and enters into regulating a commodity- finished compost. The proposed rule also mandates that all of the compost produced be sold within three years, by limiting the storage of the finished product.

Bartlett, Cedar Grove Composting

Comment: The requirement to sell finished compost within certain time periods also ignores market realities. The evidence demonstrates that the sale of compost material is influenced by season, economy, and general market conditions. A restriction on storing finished product on-site could require facilities to close their doors to incoming materials from local governments, citizens and businesses, placing them in violation of contracts, and jeopardizing consumer participation in recycling efforts. This regulatory approach could result in the decline of composting activities in Washington State. It could result in materials being landfilled as an alternative means of achieving regulatory compliance. Using an environmental regulation to reach into the private marketplace and regulate commerce is a major public policy change. Ecology has failed to demonstrate any environmental benefit to justify this dramatic regulatory reach...

...Suggested amendments

- Delete all sections that extend regulatory authority to regulate finished compost or require the sale of this commodity within a certain time.

Bartlett, Cedar Grove Composting

Comment: Rules that regulate how long yard waste, after it has been processed and turned into a marketable product, can remain on site goes against a long standing definition of solid waste. This expansion of the solid waste definition provides great concern to us as one of the largest recycling processors in the State. Although we do not typically keep finished products on site for extended periods of time we do see the problems that can be created with such a requirement.

Proposed revision: Eliminate regulations governing the length of how long finished products may stay on site as this is outside the purview of the Department of Ecology.

Huycke, Republic Services

Requirement for Turnover of Inventory - Ecology Responds

Response: In response to comments, Ecology balanced economics and market dynamics against concerns for offsite environmental impacts from building volumes of organic material and decided not to go forward with this requirement. Ecology eliminated the proposed requirements for 50% turnover in one year and 100% turnover in three years.

These limits were drawn from current standards regulating piles of solid waste. The agency does not want temporary piles to become permanent disposal sites. The limits were also proposed because of concerns that if a facility cannot market half of its product during the span of a year, it may be an indication that product quality is less than desirable, or that there is not enough emphasis on marketing and too much focus on tipping revenue. It raises even more concern if a facility needs to hold material for longer than three years as this would seem to be an indication that a facility is better at receiving feedstocks than marketing product.

Composters countered that older compost can be better compost; that long curing periods yield a stable desirable product. They also point out that markets are cyclical, and constraining inventory to certain timeframes is an inappropriate constraint.

Ecology understands the points composters made, but cannot ignore that a growing inventory means shrinking capacity for storage not just of finished product, but for feedstocks, bulking agents, and active and curing compost piles. As capacity diminishes intake may not, particularly where contracts are in place to accept certain materials from various sources. As more and more material accumulates, and as capacity for handling material shrinks, Ecology is concerned that the prospect for impact to both water and air quality increases , but also recognizes there is no absolute correlation.

The agency also expects that other elements of the existing and proposed rule address the potential for air and water quality impacts, including the performance standards of WAC 173-350-040 that remain in effect for permitted and conditionally exempt facilities. Additionally, the final rule requires values for throughput and capacity. Ecology believes such limits were already in place for many facilities, but that requirements of the final rule will force an assessment of offsite impacts when establishing onsite capacity and throughput.

If a facility can carry one hundred percent of its finished product over a three-year period without offsite impacts, then Ecology agrees there should be no reason to object. If on the other hand a facility causes offsite impacts, then some aspect of operations will need to change. Those changes may or may not relate to the amount of time any particular material is held on site.

Progressive Odor Management Plan

Ecology is aware that citizens in some areas of the state have longstanding complaints regarding odors that they allege emanate from compost facilities. Compost facility operators in some cases point to other potential sources of odor, and in some cases have taken significant and costly steps to reduce potential offsite impacts. While Ecology is not drawing conclusions on the issue of the source of odors, Ecology expects that compost facilities must be designed and operated in a way that does not impose a burden on neighboring properties.

- Stakeholders in the regulated community argue that the progressive odor management plan concept sounds good on paper, but would be a costly effort of questionable value. They argue that preparing plans that speculate about *possible* sources of odor and *possible* changes in design or operation is a poor use of time and money, and a potential distraction from identifying actual causes and solutions when there are problems.
- A municipality and tribe representing citizens who allege the use of their properties has been impaired are equally adamant that the proposed regulation does not go far enough. Additionally, although they did not comment on the proposed rule, Ecology has heard from many concerned citizens in the past regarding offsite odor impacts.

The agency response follows comments below .

Comment: 173-350-220 (4) Composting Facilities- Operating Standards (permit requirements): (f) pg 33 through (M)(vii) pg 34...

... (B) Progressive Odor Management Plan SSO/LRI have detailed Plans of Operations for our facilities. Additionally we have detailed Odor management Plans. These plans have been approved by our JHDs after thorough review. Section (B) calls for operational improvements

that "could be" made if nuisance odors are identified beyond the facilities' boundaries. SSO/LRI composting facilities are highly engineered systems. There is a multitude of "what ifs" "then what's" that could be done at our facilities. This is precisely why we hire experts and have regulatory oversight. Therefore, with the state criteria of no nuisance odor at the property boundary and JHD regulatory oversight, the certified compost experts are able to work quickly and effectively to correct the nuisance if one were to occur onsite.

Snyder, Waste Connections

Comment: A progressive odor management plan that must include a description of facility and operational improvements that could be made if nuisance odors are identified beyond the facility's property boundary, as determined by the jurisdictional health department, the department, or the air authority. The description must address the receiving, composting, curing, and storage areas of the facility. Facilities will have eighteen months after the effective date of this chapter to complete the progressive odor management section of their plan of operation;

also

"Nuisance odor" means any odor which is found offensive or may unreasonably interfere with any person's health, comfort, or enjoyment beyond the property boundary of a facility.

Speaking about these two items taken together: The definition of a nuisance odor is too open to subjective judgment. There is no definitive definition of an odor. How can we quantify odors so that there is a science based method to determine when odors are a problem before we cost these facilities a lot of money? There has been some work done in this area - see attached documents. H. Kim, L. L. McConnell, P. Millner. *Comparison of Odorous Volatile Compounds from Fourteen Different Commercial Composts Using Solid−Phase Microextraction*. *Transactions of the ASAE*. Vol. 48(1): 315−320. American Society of Agricultural Engineers, 2005.

Agency note: Two identical papers under two different titles were submitted to Ecology. We have cited the paper submitted.

Silvestri, Yakima Health District

Comment: New Odor Plans (Especially "Progressive Odor Management Plan"):

173-350-220(4)(f)(ii), (ii)(A), and (ii)(B): These sections add 3 new odor related plans to the requirements of an Operations Plan. 1) I work very hard to create clear, concise, yet comprehensive Operations Plans that hold enough value that the operators will actually read and use them. Requiring 3 Odor related plans and 2 additional topics within the current Nuisance Odor Management Plan runs counter to those goals. 2) Requiring a "Progressive Odor Management Plan" that requires a list of "facility and operational improvements that could be made if nuisance odors are identified…" is also a really bad idea. Besides being a labor intensive imagination exercise, such a 'list' would distract operators and regulators by encouraging (or worse, requiring) a composter to implement such steps prematurely which could divert attention from determining the actual cause and utilizing all the engineering, creativity and information available at the time to solve the actual odor problem. This requirement is not only excessive, it could be expensive and counterproductive to efficient, odor reducing composting.

Thomas, Terre-Source

Comment: 173-350-220(4)(f)(ii)(B) My final major objection is the whole section adding multiple new sections and requirements to my Operations Plan. The Progressive Odor

Management Plan, in particular, is not only excessive, it is counterproductive. This plan requires a list of "facility and operational improvements that could be made if nuisance odors are identified…". This provides the JHD with an easy little checklist to make a facility adhere to in the case of odor. However, it is more likely than not that the odor that actually occurs could have nothing to do with the planned and imagined odors that those 'improvements' were intended to address. Having to jump through hoops that may not have anything to do with a given odor will distract attention from identifying and resolving the actual odor issue, and will cost money un-necessarily and ineffectively.

Dressel, North Mason Fiber

Comment: …The City has a vested interest in defining regulations for composing facility processes as our citizens are routinely expressing significant impacts to their quality of life regarding nuisance odors- particularly those from large scale operators.

Due to the significant and unreasonable odor impacts to citizens of Marysville and surrounding areas, particularly since about 2005-2006 when food waste was allowed to be introduced into the composting waste stream, the City also urges more detailed and vigorous rules for the siting and permitting of new composting facilities and the permit renewal of existing facilities.

As presently drafted, it appears that the "Progressive Odor Management Plan" will be the vehicle by which odor issues would be addressed. The City is concerned that the proposed Management Plan language is not stringent enough in defining thresholds for controlling odor, nor does the language define what specific violations will trigger enforcement actions by the local health district. The City strongly urges that specific, measurable and mandatory enforcement thresholds be provided for the local heath districts and clear, specific details of how enforcement actions will escalate if nuisance odors persist. Without such specific standards the City submits that any rules or standards will be ineffective to address the nuisance odor issues frequently caused by composting operators.

Nielsen, City of Marysville Public Works

Comment: A progressive Odor Management Plan is excessive government paperwork that is expensive and time consuming. There already is an overly extensive report due to the state each year on the Air Quality for a compost facility. This report requires such far-reaching details such as the gallons per hour on each equipment, the particles emitted in fumes,,,,, that another Plan is another cost on an already over studied part of the project.

Harn, Chelan County Public Works

Comment: Additionally, we would hope that the "template" form for a "progressive odor management plan" that DOE plans to provide is substantive, clear and thorough.

Nielsen, City of Marysville Public Works

Progressive Odor Management Plans (WAC 173-350-220 (4) (f) (ii) (B).

Comment: The inclusion of a "Progressive Odor Management Plan" in facility Operations Plans sounds good on paper but will it really be worth the projected cost (which will vary greatly by facility) to provide the local health jurisdictions with a template for what will happen in response to odor nuisance complaints beyond the facility boundary? Unfortunately, it is very difficult for facility operators to anticipate all of the possible situations under which odor complaints might

occur and a template might not be the best tool to follow in all cases. That money is much better spent invested in site improvements or maintenance activities (such as regular cleaning of leachate ponds), which might actually head off potential odor problems.

Corum, Washington Organic Recycling Council

Progressive Odor Management Plan – Ecology Responds

State rules for solid waste management facilities contain locational criteria for some facilities (for example locations of landfills in relation to geologic faults). The location of a solid waste facility in proximity to other land uses must be addressed through local zoning and comprehensive land use planning. This is a responsibility the state Legislature assigned to local government.

Ecology is aware of citizen grievances in some locations. There is no question that decomposing organic matter can generate offensive odors, and compost facilities are potential sources of odor. The agency also believes that certain feedstocks may be more prone to generate offensive odors than others, and that certain conditions in the composting process, if allowed to develop, are more likely to generate odors.

Ecology's goal under Chapter 173-350 is to create design and operational conditions that minimize the potential for offsite impacts. Ecology is currently undertaking a study to look at emissions from compost facilities. We hope that the outcome of the study will be instructive for purposes of informing design and operational aspects as well as pollutant thresholds to protect air quality.

Regulated stakeholder concerns about the complication and expense of a progressive odor management plan are understandable; however, it is up to composters to take responsibility for controlling odors. The idea behind a progressive plan was that there would be a mechanism in place to encourage escalating actions that effectively control odors as they become problematic, before they have a widespread impact.

After careful consideration, the agency agreed with regulated stakeholder comments that speculating on possible solutions to possible problems was potentially unproductive. The agency removed the requirement to a progressive odor management plan, and consequently the requirement to speculate about possible solutions to problems that might occur.

The previous rule required facilities to operate facilities to control dust, nuisance odors, and other contaminants to prevent migration of air contaminants beyond property boundaries, and to have a nuisance odor management plan. Under the new rule, compost facilities are expected to operate under controlled conditions. In part, this means planning for an appropriate mix of materials and operating conditions, including carbon to nitrogen ratio, moisture, porosity, temperature, and pH to support the biodegradation of organic materials without generating offensive odors that impact off site locations. In its plan of operations a facility should address operating conditions that will prevent odors. While the rule doesn't specifically call out the parameters, C:N, pH, moisture, etc. are all factors regulators know to look for, especially given the fact that they are specifically called out in the definition for *controlled conditions*:

The final rule expands and clarifies regarding matters of odor control, and includes several elements the agency hopes will help address odor issues. Those are summarized below:

- Capacity and throughout of the facility must be established in the permit process. This will help if odors are the result of too much finished material stockpiling and becoming anaerobic, or too much raw unprocessed feedstocks on the front end.

- Feedstocks must be approved. This will help if a particular feedstock(s) generates odors that cannot be effectively managed by a facility.
- A facility must have a plan to control dust and nuisance odors to prevent them from migrating beyond the facility boundary. The agency deleted the progressive odor management plan requirement, but took balancing actions. Facilities must describe design and operational features intended to prevent offsite odor impacts, and operators must have a system of documenting complaints and summarizing how they respond to complaints.
- A description of facility maintenance activities designed to prevent odors. For example, ensuring that biofilters are working or that covers are properly in place. This will help ensure that features expected to prevent offsite odor impacts are properly maintained and used.
- A description of how wastes with a higher odor potential will be handled to reduce odor throughout the receiving and composting process. Some wastes may have to be handled at different times of the day, processed more quickly, or perhaps not accepted by the facility.
- A community relations plan describing how the owner or operator will document and manage complaints. This will ensure that operators are aware of impacts they may be having, and will provide Ecology, local health departments, and air pollution control authorities a record to assess facility responsiveness.
- A description of how staff will respond to complaints, document conditions, and summarize actions taken.
- The rule does not specify design or operational requirements for areas where finished product is stored, but does require that those areas comply with the performance criteria of WAC 173-350-040, which prohibits violation of emission standards or ambient air quality standards at the property boundary.

Finally, the agency will work with public and private entities to produce a guidance or template for an odor management plan that can guide facility response to odor complaints. This will reduce the cost to the facility but improve prospects for controlling offsite impacts.

Air Quality & Odor

Ecology responds following each comment below.

Comment: Rulemaking is Advancing before Scientific Discovery

Ecology is pursuing rulemaking despite on-going toxic and odor studies which have been designed to provide guidance to the rulemaking process.

Bartlett, Cedar Grove Composting

Response: The proposed rule and final rule do not contain elements that would directly benefit from information gleaned from the studies. Any useful information obtained from the studies will require additional foundation in the regulation in order to implement it. It may be that the outcome of the studies better inform local clean air authorities, and the solid waste rules do not require updating in response. On balance the agency did not see a benefit to delaying rule adoption for an undetermined and probably significant period of time.

Comment: WRRA and its members certainly understand and appreciate the complex issues associated with composting, not the least of which are safety (for our employees and the consumer) and odors which are the byproduct of the composting process. WRRA and its member companies have worked hard in cooperation with DOE and our local health districts over many years to deal with these problems, and we believe strongly that these efforts have been successful.

We believe that the odor issues are at least in part a result of the rush to get all organics, including food wastes, out of the landfills by 2012. We believe that further research, some of which is occurring at this time and guidance on the odor issues is required; and further discussions held on whether or not all organics should be diverted in all cases, should be convened with the affected local governments and facilities.

Lovaas, Washington Refuse and Recycling Association

Response: Ecology acknowledges that industry has put effort into researching and resolving odor related issues. We look forward to continuing work and discussions with stakeholders that will lead to improved odor control at compost facilities and fewer odor complaints.

Comment: Rulemaking is Advancing Before Scientific Discovery

Ecology rulemaking has been influenced by public concerns regarding odors and toxic emission impacts from composting facilities. Many of the proposed rule changes are designed to mitigate composting facilities' impacts on local communities.

During this rulemaking process, Ecology has initiated a toxics emissions study and has contributed to an odor emissions study which includes a large composting facility. Both of these studies are in process.

In responding to public concern about the specific issue of toxic emissions from composting facilities, Ecology concluded that the scientific analysis should precede any regulatory measures,

> "Ecology is currently pursuing a study to determine the best way of tracking and quantifying *emissions.* ***Until that is determined****, Ecology* chose not to require emissions monitoring and its associated burden."[6] (emphasis added)

A similar conclusion is warranted for many of the regulatory measures regarding odors. Ecology has partnered with the Puget Sound Clean Air Agency to track and quantify odor emissions in the Marysville/North Everett community. This study is the most comprehensive in Washington State history to determine the odor emissions profile of a large composting plant.

Ecology seems to have reached this contradictory conclusion because of its interpretation of the intensity of community concerns regarding odors,

> "Despite attempts to limit nuisance odors under the existing rule language, odor complaints continue to increase."

As it relates to Cedar Grove Composting, this is not the case. Nuisance odor complaints have fallen 38% since 2010.[7]

Similar to its conclusion regarding toxic emissions, Ecology should give time for the scientific discovery process to produce data before finalizing regulatory changes.

Suggested actions

- Delay rulemaking until odor and toxic studies are complete and their conclusions can shape final rulemaking.

• Remove "capacity" references in rulemaking because composters already have capacity permits issued from air and health regulators.

Bartlett, Cedar Grove Composting

Response: Ecology rulemaking took concerns expressed by the public, the regulated community, customers, municipalities, local health jurisdictions, staff opinion, and elected officials into consideration during this rule process.

The outcome of air quality studies and the direction that will be taken as a result are unknown at this time. The fact that Ecology has not required emissions monitoring in this final rule is not relevant to other standards that were adopted, including those that may lessen the potential for offsite impacts from odor. While Cedar Grove and other facilities may have made strides in resolving citizen concerns, the agency does not believe the benefit of waiting on the outcome of the studies outweighs the benefit of moving forward with the final rule.

The agency believes changes made in the final rule are appropriate steps to help reduce the potential for offsite odor impacts. The results of any emission studies and related data will likely require a different approach and discussion in order to incorporate them into the rules at a later time.

Comment: I live directly behind a dairy facility. When I first bought the property, twenty-some years ago, I think I've been there thirty-some years, I didn't have the flies that I do at my home. You can't go outside, sometimes and some days you can smell the cow manure. You can't have a barbecue because there are so many flies you can't leave your doors open or your windows; flies come in, huge flies. And so, a lot of my family are having sinus infections as a result of that, or asthma.

White, Citizen, Toppenish (Public Testimony)

Response: Ecology acknowledges the commenter's concern. This rulemaking does not address dairy operations in general, and cannot respond to complaints related to dairies. In some cases composting and related activities at dairies may be exempt from solid waste permit requirements. If there is a compost facility onsite, we recommend that the commenter talk with local health or local regulatory officials.

Comment: Tulalip is very concerned about odor management in regards to large commercial composting operations. Neither the current nor the proposed new rules adequately address odor issues with composting operations. There are currently two large operations that have been causing odor problems for neighboring communities; one in the Everett/Marysville Tulalip area and the other in the Maple Valley area. Both operations are severely impacting high density population centers and businesses. The odor issues are not only disruptive to the daily lives of neighboring communities and businesses, but may also cause severe health problems.

Williams, Tulalip Tribes

Response: Ecology is aware of odor complaints raised by citizens in the Marysville and Maple Valley areas and made revisions in the final rule to help address these issues related to odors. Ecology has identified elements of the rule that are specifically relevant to odor control. Those are described in the preceding section regarding progressive odor management plans.

Comment: In subsection (g) (iii) on page 35 of the proposed rules, the agency is only proposing to require maintaining porosity of the composted piles and a maximum moisture

content of 60% to minimize odor emissions. These requirements are necessary to properly compost the materials and prevent the piles from turning anaerobic, but are not usually what is causing odor problems with composting operations. Two of the primary causes of odor problems with composting operations are too low of a carbon to nitrogen (C:N) ratio and either too high or too low pH levels of the materials.

Table 220-B for testing parameters on page 29 lists C:N ratios, but does not have a range limit. The table also lists pH with a range of 5 – 10, which is a very wide range to allow for composting operations. That range appears to be selected to avoid having the compost operations fall under the hazardous waste regulations, more than anything else.

The lower the C:N ratio the more volatile organic compounds (VOC)'s and ammonia is released during the composting process. The requirements for the C:N ratios would need to vary depending on the type of composting operation being regulated. Facilities only composting wood waste can easily maintain a high C:N ratio while composters using food waste and grasses need to mix in wood waste to raise the ratio.

When the pH levels rises above 7.5 to 8 the nitrogen compounds are more readily driven off as ammonia during the composting process. When the pH level drops below 6 - 6.5 the VOC emissions may also increase.

Williams, Tulalip Tribes

Response: The standards in Table 220-B to which the commenter refers are product quality standards, not operational standards. The agency dropped several proposed final product standards from the table. Compost facilities are expected to operate under controlled conditions. In part, this means planning for an appropriate mix of materials and operating conditions, including carbon to nitrogen ratio, moisture, porosity, temperature, and pH to support the biodegradation of organic materials without generating offensive odors that impact off site locations. In its plan of operations a facility should address operating conditions that will prevent odors. While the rule doesn't specifically call out the parameters, C:N, pH, moisture, etc. are all factors regulators know to look for, especially given the fact that they are specifically called out in the definition for *controlled conditions* (see new definition in WAC 173-350-100) that facilities must operate under.

Comment: Odor problems appear to be at the worst during hot days with little or no wind. To reduce odor problems during these weather conditions, compost piles should not be turned during the first two weeks of composting. Turning the piles allows the odorous compounds to be released more quickly.

Williams, Tulalip Tribes

Response: Ecology is uncertain whether this would be helpful. Turning introduces oxygen back into the pile to maintain aerobic conditions that are less likely to produce offensive odors. A two week period of no turning during hot weather could result in anaerobic conditions and a significant release of odors on turning. Also, this approach would not be initially consistent with windrow type systems where regular turning of the pile over a fifteen day period is necessary to meet requirements for pathogen reduction.

Comment: For facilities using green and/or food waste, they should use negative aeration and treat the exhaust air with a bio-filtration system to help remove odorous compounds. The rules should limit the initial pile depth since deep piles are more difficult to aerate. These facilities

should also keep a stock pile of wood chips on site. Covering a compost pile with moist wood chips can help to reduce odor emissions from the compost piles.

Williams, Tulalip Tribes

Response: This approach appears compatible with an aerated static pile system for pathogen reduction. A health department could require this as a permit condition, but the approach would not work for windrow systems. Ecology also does not know if the suggested approach would yield a significant odor reduction.

Comment: Facilities handling food waste should be required to have their reception facility and grinders enclosed in a building with a negative pressure system. The exhaust from the negative pressure system should be treated with a bio-filtration system.

Williams, Tulalip Tribes

Response: Some foodwaste composting facilities have been operating without a tipping building and without odor complaints for years. We cannot conclude in all cases that the lack of a tipping building with negative exhaust to a biofilter leads to nuisance odors. It may be the best control option for one facility, but an unnecessary investment for another. Ecology did not include this in the final rule because it would represent a significant cost not previously accounted for and is beyond the scope of this rulemaking. It can be considered in future rulemaking efforts.

Comment: Delivery trucks hauling food waste to the composting facilities should use enzyme based products that breaks down complex odor causing organic molecules, helping to reduce the odors leaving their trucks. Spraying the enzymes onto the compost during turning operations may also help to reduce the odor problems.

Williams, Tulalip Tribes

Response: Ecology lacks sufficient information to endorse this approach and did not include it in the final rule.

Comment: The Tulalip Reservation along with the Cities of Everett and Marysville have been struggling for over three years to solve the odor issues with the Cedar Grove operations in Everett. It is costing our communities a lot of time, money and effort to try to deal with the situation, without a good answer in sight. At this point, it looks like our communities are going to have to spend a lot more money to hire an independent contractor to do an odor study and take the issue to court. Cooperation between us and the permitting agencies has seen little to no progress to this point. We need to have better and enforceable rules and regulations that help to solve these issues. Currently, the individual neighboring residents and local governments impacted by the operations, are having to try to solve the issues themselves, because state and regional agencies with jurisdiction seem to be either unable to or unwilling to take meaningful actions to solve the local problems.

Williams, Tulalip Tribes

Response: Ecology agrees that regulatory agencies have not been successful enough in solving this problem, and is still working with stakeholders. The reasons are more complex than related here. The current rulemaking is a step forward in addressing odors.

Comment: Under the Clean Water Act the discharge of wastewater into the waters of the State have specific, measurable effluent parameters set forth in an operator's NPDES Permit. The City

urges that any standards for emission of air pollutants by solid waste and compost handlers should be managed similarly and regulated by the Department of Ecology under State law and the Clean Air Act. As such, any permit issued to operate such facilities needs to be subject to clear, measurable and enforceable odor standards. Such a program under the Clean Water Act as administered by Ecology has proven to be very effective and there is every reason to believe that a similar program as it relates to the emission of odors into the air would also be effective in holding operators and permittees accountable for their adverse impacts to the air we breathe…

…It is the City's sincere hope that the changes proposed in the rule amendments will provide the local health districts and Department of Ecology with an improved ability to regulate composting facilities in order to ensure that nuisance odor problems are eliminated.

Nielsen, City of Marysville Public Works

Response: Ecology believes the changes adopted in the final rule will improve prospects for reducing offsite impacts from compost facilities. The outcome of current studies will inform composters as well as regulatory agencies, and help identify more effective permit requirements. The agency is not in a position to establish specific values for odorous compounds. As more concrete data regarding emissions becomes available, air agencies may adopt and enforce standards in the future."

Comment: WAC 173-350-220(q)(iii). Minimize odor by maintaining porosity of composted material piles and managing moisture levels in composted material piles, not to exceed sixty percent moisture

Moisture content of a composted material pile is only one criterion that may contribute to odor issues. Using this single physical parameter to attempt to minimize odors is not a scientifically proven approach. Additionally, odors are addressed in numerous other sections of this standard, as well as, other permit requirements.

We recommend that this language be removed from the proposed rule.

Wheeler, Lenz Earthworks

Response: Ecology is not using a single parameter here (in fact, two are mentioned). If the commenter is suggesting that there is a longer list of parameters that might be monitored in order to assess the potential for odor generation, or to evaluate current facility operations, Ecology concurs. Ecology believes that wet, dense piles promote anaerobic conditions that in some cases may be a source of odor. Ecology addressed issues regarding porosity and moisture content in the section Porosity and Moisture.

Comment: It appears that the intention of the rule is to allow composters to design and operate "organic" facilities; however as a regulator we need to have the ability to measure the effectiveness of the design and/or operation. It's is our belief that the following comments will enhance our ability to enforce the rule

Operating standards (a) (x) – the rule requires that composted material be analyzed for the parameters outlined in Table 220-B. It appears that the parameters that are intended to measure odor potential have no limits and/or range (i.e. porosity). Suggestion, create odor measuring parameters with acceptable ranges (i.e. C:N ratio, moisture, pH, porosity, temperature, etc) that can be used as an evaluation tool for determining if a facility is controlling odors. This tool would be of use when reviewing the progressive odor management plan and the plan required in (f) (ii).

Enger, Snohomish Health District

Response: The standards in 220-B are more about product quality, and less about operational standards and the potential for offsite odor impacts. Compost facilities are expected to operate under controlled conditions. In part, this means planning for an appropriate mix of materials and operating conditions, including carbon to nitrogen ratio, moisture, porosity, temperature, and pH to support the biodegradation of organic materials without generating offensive odors that impact off site locations. One of the challenges of composting is the range of materials and mixtures involved. The commenter's recommendation has merit. It is outside the scope of this rulemaking process, and would be more appropriately captured in guidance documents.

Comment: It also seems contradictory for DOE to be proceeding with this rule amendment and adoption by the end of this year when 1) the agency is continuing with its odor/toxic air emissions studies at composting facilities around the state and 2) a major public/privately sponsored odor monitoring study is underway in the Everett area. Both of these studies should provide some guidance as far as odor sources and best odor management practices at composting operations.

Corum, Washington Organic Recycling Council

Response: Amendments to the rule are not all about compost facilities, or even all about odor at compost facilities. Many of the changes to the rule are not related to the odor studies. Some of the proposed changes in 350 address the factors that contribute to the creation of offensive (perceived) odors at organic management facilities. The results of the studies mentioned will be considered when creating a guidance document for managing response to odor complaints. On balance the agency does not believe that delaying adoption of the rule pending results of the latest odor study(ies) is an appropriate course of action.

Comment: There seems to be an assumption also, that composted material remaining on site after it has been tested can be a significant source of odors. If this is in fact one of the reasons for DOE desiring to continue to regulate composted material as a solid waste, then where is the scientific evidence behind this assumption?

Corum, Washington Organic Recycling Council

Response: The rule has been constructed to provide relief for facilities whose finished products meet performance standards of the rule. Ecology is not so much regulating the finished product as it is regulating a solid waste management facility. The potential for odor from a raw feedstock that has not undergone any composting is higher than the potential for odor from a finished product. As organic material is broken down and stabilized, the more decomposable fractions most capable of generating odors decrease in total, and the fraction more resistant to decomposition increases. Thus, the potential for odor generation will decline. Given the varying degrees to which a compost product may be "finished", we do not agree that a finished compost pile of any size is incapable of producing an offsite impact to either surface water or air quality. If decomposition can occur, odors can be generated and there is a possibility of surface water impacts.

Comment: Have you looked into the Cedar Grove issues in Maple Valley and Smith Island in Snohomish County?

Response: Yes, Ecology is aware of citizen concerns in the area of the 38th District

Porosity & Moisture Content

The final rule requires composters to minimize odor by maintaining porosity of composted material piles and managing moisture levels in composted material piles, not to exceed sixty percent moisture.

The agency response follows comments below.

Comment: 173-350-220(4)(g)(iii) Again, my primary compost must age for 2- to 3-years to create my high quality certified organic compost products. If this material becomes excessively wet, the process stops and the material is worthless. I cannot sell it. Therefore, I static compact and carefully shape my piles of 'finished' compost which effectively reduces infiltration of water through the high rainfall seasons that these piles must experience. This clause requiring specific porosity and moisture content of finished compost applies basic compost 101 rules of thumb to experience-based, PhD level compost production business. If this is imposed, I am out of business.

Dressel, North Mason Fiber.

Comment: 173-350-220(4)(g)(ii)& (iii) As a consultant with high stakes in the compost industry as well as a firm belief in the value of this product, I am continually encouraging my clients to understand the value of aging past the minimum stability requirements. Several of my clients currently mature their high quality compost products for well over 12-months. If they now have to manage those piles to a set porosity and moisture content, all the testing and experience that has gone into development of those products could go up in smoke. One of my best clients has assured me he will close his doors if these requirements are enacted. Based on my clients' facilities, I am not at all convinced that the finished compost piles are significant sources of odors. If you are quite sure that a particular facility is having a problem with odors from their finished compost pile, please deal with that facility directly. Do not impose blanket requirements on facilities that do not have that problem and do not have the ability to jump through expensive and limiting regulatory hoops for no environmental or other benefit. The requirements of porosity and moisture content limits for finished compost will stifle innovative and responsible compost manufacturing techniques.

Thomas, Terre-Source

Comment: We submit that there should be more specific provisions for enforcement around the new operating standard requiring that odor be minimized by maintaining porosity and keeping moisture content below 60%. Additionally, we would hope that the "template" form for a "progressive odor management plan" that DOE plans to provide is substantive, clear and through.

Nielsen, City of Marysville Public Works

Comment: WAC 173-350-220(q)(iii). Minimize odor by maintaining porosity of composted material piles and managing moisture levels in composted material piles, not to exceed sixty percent moisture

Moisture content of a composted material pile is only one criterion that may contribute to odor issues. Using this single physical parameter to attempt to minimize odors is not a scientifically

proven approach. Additionally, odors are addressed in numerous other sections of this standard, as well as, other permit requirements.

We recommend that this language be removed from the proposed rule.

Wheeler, Lenz Earthworks

Porosity and Moisture Content - Ecology Responds

Response: WAC 173-350-100 defines composting as the *biological degradation and transformation of organic solid waste under controlled conditions* *designed to promote aerobic decomposition*. The conventional best practice is to maintain an aerobic condition within a compost pile and hold moisture content between 40 and 60 percent. This promotes aerobic decomposition from which the primary emissions are carbon dioxide and water vapor. Anaerobic conditions that may occur when a pile is too wet or too densely packed (or both) promote the generation of methane and ammonia, and other emissions that are more likely to be odorous. Finished compost still contains organic matter that can be decomposed aerobically or anaerobically.

Ecology's primary concern here is odor management. The practices described by the commenters do not conform to the expectations of the regulation. If the operation as managed is successful, and is yielding marketable products and minimizing odor problems, the rules allow a local jurisdictional health department to authorize a variance to these requirements. The process for obtaining a variance is located at WAC 173-350-710(7). We recommend the commenters work with the local health departments involved to obtain variances as appropriate.

Physical Contaminants

The department has received many complaints about physical contaminants in compost, and many comments about regulation of physical contaminants in the proposed rule. The existing (2003) rules set a limit of <1% manufactured inerts (without defining the term). In the proposed rule Ecology defined *physical contaminants* (WAC 173-350-100) to replace manufactured inerts, then specified a limit of 1% by weight in compost (Table 220-B). Ecology further proposed to limit film plastic to 0.1% by weight (Table 220-B). Most comments fell into one of the following categories.

- Objections to classifying rocks as physical contaminants.
- Arguments that plastics, glass, textiles, rubber, leather, metal and other similar items do not have a health or environmental impact, and that consumer purchasing should steer product quality in these regards.
- Concerns about the 0.1% standard for film plastics, how it is measured, that it is a marketing (not environmental) issue, and the cost of extra processing to meet the standard or the potential economic impacts related to large quantities of compost failing the standard (and possibly having to be landfilled.

The agency response follows comments below.

Comment: We believe requiring a detailed plan of operations as part of the permitting process will help improve environmental performance of large scale composters. An increase in loads rejected with greater than five percent physical contamination will quickly provide a strong

incentive for organics collectors to improve their education and enforcement to ensure cleaner loads.

McLaughlin, King County Solid Waste

Comment: We have some concerns with the addition of "physical contaminant" as a testing parameter. The other testing parameters such as metals, nitrogen, fecal coliform, salmonella and sharps all have clear potential harmful impacts to humans and the environment. Less clear is the negative impact from a physical contaminant such as plastics, glass, textiles, rubber, leather or metal in finished compost. While these materials are undesirable in compost and subsequently on our landscapes, it seems the market can serve as arbiter. Users and purchasers have the ability to reject compost that does not satisfy quality they are after. Physical contaminants as defined in 173-350-100 are very visible to the user, and processors will create a product they can sell; thus, a strong incentive is already built into the process. Regulating this parameter seems unnecessary and problematic. The proposed language does not make clear what methodology for measuring physical contamination will be used. What basis was used to determine the threshold set for 0.1% of film plastic? As was indicate in an earlier comment, why is rock included as a contaminant?

Additionally we are concerned that if a finished product fails a contamination test and must be landfilled, how will these materials be reconciled in a jurisdictions recycling rate? Will Ecology have a mechanism to track and sync with other reported data and will these then be deducted from county recycling rate calculations?

It seems there are some acceptable uses of compost with a small amount of contaminant such as glass, plastic, textiles or rock that is preferable to landfilling. As drafted, there appears to be no middle ground for compost that fails the physical contamination test (but passes all of the human health testing parameters) - it either must pass all or be landfilled. This is counter-productive to the stated goals to increase sustainable organics management efforts and both improve environmental performance and at the same time help protect long term markets for compost. The physical characteristics of compost as defined in the physical contaminants definition would be better suited by market drivers and not human health drivers whose measurement methodology is not clearly defined.

McLaughlin, King County Solid Waste

Comment: Physical contaminants – this is also a marketing parameter, but worse, this parameter is associated with a strict limit. If my customers don't mind large pieces of wood or rock or even plastic, Department of Ecology should not mandate that my product be landfilled. We meet specifications that my customers require for their use. WSDOT has strict limits on film plastics that we will meet for them. Requiring any compost that does not meet the limit for "rocks", "organic constituents that are not readily decomposed" [could include wood], etc. be landfilled (essentially the fate) is not reasonable, not needed, and not responsible.

Dressel, North Mason Fiber

Comment: Our member companies are working tirelessly throughout the State to reduce incoming contaminants and residual contaminants in finished compost in order to effectively market their products and divert more and more waste from landfill disposal. We strongly encourage the Department to reconsider these proposed provisions in the rule, and reach a

compromise that retains the integrity of the industry, but does not place an economic burden on processors.

Phillips, Washington State Recycling Association

Comment: Ecology rulemaking introduces more stringent parameters for finished compost which are not supported by science, will increase the cost of compost operations and are not accounted for in the agency's cost-benefit analysis.

Not supported by science. Ecology's proposed definitions add rocks, plastics, textiles, rubber and leather to its list of "contaminants" without altering the "less than 1% by weight" limit. In the specific case of rocks, a small amount of dense rocks may cause a compost pile to fail the 1% weight limit of physical contaminants. Ecology has not demonstrated a human-health or environmental threat from rocks in finished compost…

...Suggested amendments

Delete "rocks" from list of Physical Contaminants.

Bartlett, Cedar Grove Composting

Comment: Revise the definition for "physical contaminants" so that it does not include "rocks" but rather only harmful elements in finished compost.

Physical Contaminants – "*as they relate to incoming feedstocks and compost quality means inorganic and organic constituents that are not readily decomposed during the composting process including but not limited to, plastics, glass, textiles, rubber, leather, metal, ceramics, rocks, polystyrene and wood pieces containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol or copper-chrome-arsenate*.

We are unaware of any human health or environmental hazard presented by "rocks" whether pertaining to incoming feedstocks or compost quality. "Rocks" should be removed from this definition.

Corum, Washington Organic Recycling Council

Comment: This comment preceded by definition of physical contaminants – as they relate to incoming feedstocks and compost quality means "We are unaware of any human health or environmental issues associated with small rocks in compost and recommend that *"rocks"* be deleted from the definition. If the intention of DOE is to address inerts here that would be an aesthetic concern. Possibly a naturally occurring "inert" classification could be created to include rocks, sand and gravel, none of which are "physical contaminants". However, the untested *"fines"* from construction and demolition debris processing, might be classified as a physical contaminant since it could cause the compost product to fail the metal thresholds set for a marketable final compost product. That is a human health and environmental concern.

Croll, Seattle Public Utilities

Comment: "Physical contaminants" include rocks, how are rocks defined. Is sand or gravel considered a rock? Why are rocks included? Rocks should be excluded from this definition.

Deatherage, Barr-Tech

Comment: Physical contaminants – This parameter is also a market based requirement... this new "physical contaminants" parameter includes rocks and potentially larger pieces of wood AND comes with a strict limit. This requirement is unreasonable, unnecessary, very expensive for my clients, would potentially doom a great deal of good healthy compost to landfill, and is therefore, also, not responsible. The definition of "Physical contaminants" should be changed to only include harmful materials – or return to the "manufactured inerts" requirement.

Thomas, Terre-Source

Comment: We recommend that "rocks" be deleted from the definition. Rocks could mean anything from sand to small pebbles, etc. Rocks in compost do not create any human health or environmental risk. If compost has an unacceptable amount of rocks for a particular application, specifications and/or the market place can address that issue.

Jackson, Snohomish County Public Works

Comment: Something as simple as a rock is not as simple as it seems. Sand is rock, as is gypsum or boulders. Listing "rocks" as a contaminant without definition complicates the issues. Having finished compost with a few too many rocks turns it into a solid waste with no remedy mentioned in the regulations. This issue, along with other questions posed at the public hearings, was not clarified during the Q&A.

Schutt, Royal Organic Products

Comment: We contend that "rocks" should be struck from the definition of Physical Contaminants. Contrary to the definition of "Contaminant", rocks do occur naturally in the environment...

…Secondarily …including rocks as Physical Contaminants will serve only push a given quantity of compost over the allowed limit given their natural density and weight. As noted above, rocks are naturally occurring constituents of compost and should not be included in the definition of "Physical Contaminants".

MacGillivray, City of Kirkland

Comment: The definition of physical contaminants should not contain naturally occurring substance such as rocks. In accordance with the U.S. Composting Council's Test Methods for the Examination of Composting and Compost (TMECC), the Department should strictly limit their definition of physical contaminants to man-made contaminants and remove *rocks* from the list of physical contaminants. Alternatively, the Department could adopt and use the USCC's suggested terminology of *man-made inerts* which limits contaminants to those that do not result from natural processes.

Shanley, Waste Management

Comment: We have concerns about the expansion of the definition of "contaminants" to include rocks while leaving the upper limit of contaminants at 1% by weight. We share WSRA's concerns that this is an extensive requirement that seems unreasonable. Furthermore, there is no evidence to support that the presence of rocks in finished compost poses a risk to human health and the environment. Proposed revision: Remove rocks from the definition of physical contaminants.

Huycke, Republic Services

Comment: In the proposed description "rocks" are called out as a contaminant. We suggest removing rocks from this description since they do not have the same characteristics or origin as the other anthropologically developed or contaminated materials listed and do not pose the same contamination issues.

Wheeler, Lenz Earthworks

Comment: …We support the Department of Ecology's (DOE) efforts to maintain high standards and address concerns about odors and product quality. We have, however, questions and/or comments regarding the scientific validity for some of the proposed changes…

What is the basis or documented health threat for identifying rocks as a contaminant in finished compost?

Kato, City of Tacoma Public Works

Comment: The new definition includes rocks as a contaminant. We are unaware of any human or environmental health issues that could be attributed to rock in compost. This natural inert, while not necessarily beneficial to a finished compost product, could lead to a failed contamination test, thus requiring disposal. It is not clear how this policy is beneficial to the intent of the WAC revisions. We suggest an amendment to delete "rocks" from the definition of "Physical Contaminants."

McLaughlin, King County Solid Waste

Comment: The bigger problem comes with the substitute of the testing parameter "physical contaminants" for "% foreign matter". The original "% foreign matter" testing parameter had a threshold of *less than 1% by weight* without rocks being included in the definition of % foreign matter. The new physical contamination definition includes rocks and sets the threshold at "*less than 1% by weight total, not to exceed .10% film plastic*". First of all the new definition should not include rocks…there is no good testing protocol

Corum, Washington Organic Recycling Council

Comment: The proposed rule change significantly changes the definition of what are considered "contaminants" in finished compost, but leaves the upper limit at 1% by weight. The primary concern of the WSRA is that this definition has been modified to include rocks. The WSRA believes that this is an extensive requirement that seems unreasonable. Furthermore, there is no evidence to support that the presence of rocks in finished compost poses a risk to human health and the environment.

Proposed Revision: Remove rocks form the definition of physical contaminants.

Phillips, Washington State Recycling Association

Comment: We are requesting that Ecology either defines the term "rock," or removes it from the definition of physical contaminants.

We are requesting this action because there is no size/scale specification inherent to standard definitions of "rock." Thus "rocks" cannot be screened out. This vague approach could lead to problems/confusion in the future.

Durfey, Natural Selection Farms

Comment: "Physical contaminants" requirement should not include "natural materials" such as rocks or large pieces of wood, etc. Only harmful parameters should be regulated.

Thomas, Terre-Source

Comment: …Ecology's proposed definitions also restrict the amount of film plastics in finished compost to 0.1% by weight. Ecology refers to the environmental concerns associated with film plastics, "

...physical contamination from compost...gradually rises to the surface and enters surface waters, creating risk to terrestrial and aquatic species."[1]

Ecology, however, provides no scientific analysis to quantify this risk. The 1/1000th weight limit for film plastic is arbitrary and will incur significant costs on the composting industry. According to recent waste characterization data from the City of Seattle, film plastics in incoming feedstock streams are 6 times higher than this limit in the commercial sector and 11 times higher than this limit in multifamily organic streams.

Suggested amendments

- Eliminate film plastic limit. It is already included in the 1% limit for Physical Contaminants.

Bartlett, Cedar Grove Composting

Comment: Revise Table 220B for "Physical Contaminants" so that it only requires the 1 % limit without the additional caveat "of which less than .1% is film plastic".

Corum, Washington Organic Recycling Council

Comment: Where did the ≤ .10 percent film plastic limit come from and how is it tested or determined? This should be dropped from the rule.

Deatherage, Barr-Tech

Comment: Regulation of Finished Compost Expands Authority, and "Requirement to Sell Product" Ignores Market Realities

Product screening requirements would reduce markets that require larger, more porous materials for specific environmental applications

New definitions will significantly limit growing markets for compost use in low impact development construction, filtration and storm water management

Bartlett, Cedar Grove Composting

Comment: Consolidating, updating, and clarifying the rules is a good idea and was needed. However, some of the rule changes seem to go beyond the purview of Ecology and those issues would be better left to market forces. The drastic change of the limits for film plastic does not just change the cost structure but it would, as worded, condemn large amounts of otherwise finished compost back to the landfills. It would also cause the operator to treat that material as a solid waste and increase expense regarding leachate and storm water run-off and other issues. While the industry is continually striving to increase the quality of its products, the specifications should be left to the customer and application as long as it does not adversely affect human health or the

environment. If we could we eliminate all plastics (conventional and compostable) from the composting stream that would be wonderful for all the stakeholders, but it is not practical to expect us to reject loads from a large municipality or county that holds so much power over us. If a load is received that is over 5% contaminated, who is in violation? Compostable plastics (now Manufactured Organics) are not considered a contaminant upon arrival but they are a contaminant in the compost. No composting facility in this state is set up to consistently break down compostable plastics at the required 140-180 days at temperature needed. Yet these compostable plastics are being pushed by some government agencies as environmentally friendly. They will end up in the landfill.

Schutt, Royal Organic Products

Comment: Additionally, the film plastic restriction may limit the marketability of organic recycling materials as much as 20% of current volumes going out, instead of achieving Ecology's intent to increase the market. One reason is that a significant portion of the market for finished compost requires material that is between% inch and 1 inch. This product is needed for more porous applications used for erosion control. The proposed rule would require all compost material to be processed through a% inch screen to reduce film plastic contamination. The unintended consequence of this rule would be to eliminate the erosion control market for finished compost. Additionally, specifications related to low impact construction projects, rain gardens, and storm water management that were developed over many years throughout the region would be in jeopardy with the new requirements.

Suggested amendments

- Eliminate film plastic limit. It is already included in the 1% limit for Physical Contaminants.

Bartlett, Cedar Grove Composting

Comment: Physical Contaminants- this test replaces the testing for"% of foreign matter" which had a threshold of "less than 1% by weight total". The new test for physical contaminants sets a limit of "less than 1% by weight total, not to exceed .10 %film plastic". We applaud the intent of this restriction, though we have concerns that it might be impractical, particularly concerning film plastic. What is the standard testing methodology for this new test? If there is none, particularly for measuring the film plastics, then we recommend that the original "less than 1% by weight total" be kept and that rocks should not be included in the definition of physical contaminants.

Jackson, Snohomish County Public Works

Comment: The limit of less than one percent (1 %) of physical contamination by weight total, not to exceed one tenth of one percent (.10%) film plastic standard is unreasonable. Municipal feed stocks, in particular commercial and multifamily organics, can at times contain significant amounts of physical contaminants, particularly film plastics. While composting facilities are equipped to screen out most contamination, the fact remains that despite all best efforts and intentions, finished compost will include some degree of film plastic contamination higher than .10%. If this reduced threshold of allowable film plastic contamination is adopted to replace the national standard of no greater than 1% for all man-made inerts as required in the *Standard Specifications for Compost for Erosion/Sediment Control (2003),* we believe that a large percentage of our municipal organic waste is at risk of being landfilled and not composted.

MacGillivray, City of Kirkland

Comment: The proposed rule adds a requirement that film plastic make up no more than 0.1% of finished compost, by weight. The WSRA does support the reduction of contamination in finished compost to the greatest extent possible, and we find it to be essential to effectively market compost. The concern is that this puts an extra financial burden on our member composters that is unreasonable. Additional laboratory testing costs and processing costs could significantly reduce the competitive marketing of compost and drive down the demand for the more expensive product.

Proposed Revision: Eliminate the 0.1% film plastic requirement. It is already included in the 1% total physical contamination threshold.

Phillips, Washington State Recycling Association

Comment: The Department should adopt and require the use of the USCC's test methods for film plastics and man-made inerts, Test Methods 3.05 and 3.08, respectively, as found in their publication, Test Methods for the Examination of Composting and Compost (TMECC). Utilizing the current amended definition of physical contaminants in the Department's proposed rules, there is no equivalent test method in the USCC's TMECC. As previously stated, the physical attributes examined in compost include man-made inerts, which would include only naturally occurring properties and would not include rocks. The Department should use a classification of physical contaminants which is consistent with Test Method 3.08 for man-made inerts and should also adopt this corresponding test method.

Furthermore, USCC also provides Test Method 3.05 for film plastics which is based on surface area rather than by weight. USCC has developed these standardized testing protocols, like Test Method 3.05, using established industry specifications and experience. Moreover, WM is not aware of other state regulations which use weight as a standard in determining the amount of film plastic in compost. Thus, we recommend that the Department adopt the peer-reviewed and uniform USCC Test Method 3.05 for film plastic. WAC 173-350-220(4)(a)(x); Table 220-B

The Department should work with the composting producers to confirm if the limit of less than 0.10 percent film plastic by weight as proposed is achievable. WM's understanding in speaking with our composting partners is that there has been no research into whether the film plastic limitation is overly restrictive or on its definitive impact on finished compost. Thus, we encourage the Department to actively collaborate with the composting industry to determine if this additional requirement for final composted material is indeed both reasonable and attainable before this parameter is finalized. . WAC 173-350-220(4)(a)(x); Table 220-B

Shanley, Waste Management

Comment: …We support the Department of Ecology's (DOE) efforts to maintain high standards and address concerns about odors and product quality. We have, however, questions and/or comments regarding the scientific validity for some of the proposed changes…

What are the health impacts of plastic film residue in finished compost? Is there scientific evidence to quantify or support the proposed unacceptable levels of film plastic particles?

Kato, City of Tacoma Public Works

Comment: The proposed rule adds a requirement that film plastic make up no more than 0.1% of finished compost, by weight. Once again we join WSRA in its support of the reduction of contamination in finished compost to the greatest extent possible, and we find it to be essential to effectively market compost. We believe the extra financial burden on our partner composters is

unreasonable. Additional laboratory testing costs and processing costs could significantly reduce the competitive marketing of compost and drive down the demand for the more expensive product. Proposed Revision: Eliminate the 0.1% film plastic requirement. It is already included in the 1% total physical contamination threshold.

Huycke, Republic Services

Comment: Physical Contaminants - this test replaces the testing for "% of foreign matter" which had a threshold of "less than 1% by weight total". The new test for physical contaminants sets a limit of *"less than 1% by weight total, not to exceed .10% film plastic"*. What is the standard testing methodology for this new test? If there is none, particularly for measuring the film plastics, then we urge that the original *"less than 1% by weight total"* be kept without the reference to the *"less than .10% film plastic"* and the inclusion of *"rocks"* in the definition of physical contaminants.

Croll, Seattle Public Utilities

Comment: … and second, there is no good testing protocol for determining the percentage of film plastic. This is also an aesthetic issue. A market probably exists for compost that might exceed this hard to measure parameter and it should not be relegated to landfill disposal if multiple screening fails to remove all film plastic. This would be counter to state and local jurisdiction recycling goals.

Corum, Washington Organic Recycling Council

Comment: Table 220-B Testing Parameters. Physical contaminants are limited to <1 percent by weight total, not to exceed .10 percent film plastic

A new performance standard for Physical contaminants is proposed; however, no approved test method exists to prove compliance with this standard.

We recommend no change to the current performance standard for manufactured inerts.

Wheeler, Lenz Earthworks

Comment: Table 220-B Testing Parameters. Physical contaminants are limited to <1 percent by weight total, not to exceed .10 percent film plastic

We agree with Ecology that increased household composting is likely to increase the prevalence of film plastic in feedstock; however, the requirement to limit film plastic to 0.10 percent is a potentially onerous requirement that has not been adequately evaluated… Based on the lack of information provided in the analyses we do not believe that imposing this more restrictive requirement is prudent at this time. A more complete impact analysis and list of alternatives to meet this new requirement should be developed prior to implementation of a new standard.

We recommended no change to the current performance standard for manufactured inerts.

Wheeler, Lenz Earthworks

Physical Contaminants- Ecology Responds

As a result of comments on physical contaminants, Ecology made two significant changes in the final rule. We removed rocks from the definition of physical contaminants, and increased the

allowance for film plastic from 0.1% to 0.25%, but placed limits on the use of material with more than 0.1% film plastic.

Ecology has observed that there is a tendency to focus on composters as the source of problems such as excess film plastic in compost. We suspect the physical contaminants of concern originate mostly from commercial food waste collections, at the point of generation. Composters share responsibility for educating their feedstock suppliers because in the end, compost must be a clean product that all consumers can use without concern for the burden of coping with unwanted trash.

The final rule requires that composters have a plan for either rejecting loads with more than 5% physical contaminants by volume, or a plan to identify and separate contaminated loads and clean them up to an acceptable level prior to composting. We believe this requirement gives composters support for rejecting loads from providers who implement programs with poor waste screening. That approach has been reported as helpful by one large composter. That ability will now be available as a tool statewide as a result of the new language.

The department received many comments objecting to the inclusion of rocks in the definition of physical contaminants. Ecology agrees that rocks should be removed from the definition of physical contaminants in the final rule.

Ecology disagrees with comments that plastics, glass, rubber, textiles etc. should be left to the marketplace. We believe the public and compost users in general expect government to provide some reasonable degree of protection against receiving products that may cause a nuisance through their use, or incur an obligation on the user to remove contaminants that should not have been present in a finished organic product. These kinds of items in a finished compost product can be considered litter, just as they are considered litter when seen along the roadside or in a park or an urban landscape (all places in fact where compost is commonly used). Litter *is* harmful and unacceptable in the environment, and for that reason there are laws and rules that address littering. This problem has been so severe for the State Department of Transportation that they have been obligated to clean up projects involving compost before they could be certified as complete. DOT has moved away from specifying coarse compost (per their specifications) for their projects because of extensive problems with trash in the products. They are now considering alternative materials where a coarse compost might otherwise be suitable. This outcome is not good for the statewide program.

The inability or reluctance of feedstock generators and composters to address this problem may have damaged a significant market for compost products. The potential loss of market share damages overall goals for recycling. Ecology supports businesses trying to build a better future for the state's waste management programs. That future should be built on a foundation that addresses these issues.

In setting the standard for film plastics at 0.1 percent, Ecology was guided by an evaluation of how products with up to .25% film plastic might look. The fraction of a percentage seems like a small number, but film plastic itself is very light, and .25% is a significant amount of material.

As a result of comments, Ecology sampled film plastic in compost products around the state. Ecology used a lab accredited by the U.S. Compost Council. The Council has methods in place for measuring physical contaminants in compost by weight. The Council's methodology specific to film plastic is based on surface area covered of pieces in a sample. In the judgment of Ecology and others the "area approach" was complicated, time consuming and more costly. The agency opted for a percent by weight approach, for which existing Compost Council methods are easily adapted. The lab had no trouble with the methodology, and the additional cost was nominal. Ecology will provide guidance following rule adoption. A discussion of sampling and results follows.

Ecology collected 62 samples representing several different products from eight compost facilities. A formal randomized approach was not used, but samplers took steps to minimize bias. Each sample was a composite of multiple discrete samples from finished product piles. Each composite was mixed and reduced until it met the quantity goal for the final sample. The average value for film plastic (to the 4 mm limit used by USCC) was 0.018%. The average of all other plastics was 0.095%. Glass was .005%. No metal pieces were found. The average value of all plastic, glass, and metals was 0.117%, *a value just marginally above the proposed limit of 0.1 percent for film plastic alone*. Of the 62 samples, the only ones at jeopardy were those with postconsumer food waste as a feedstock, and only in the coarsest grade material. The percentage of food waste in the mix, and the number and size of screens will have a significant impact on whether a sample will pass or fail. Some of the samples with postconsumer food waste failed the 0.1% standard, but all passed the 0.25% threshold. One sample failed the 1% limit as the result of a single large (relatively) piece of hard plastic.

Most of the concern expressed by stakeholders was about the threshold for film plastic, which was the focus of our sampling effort. The lab did not remove pieces of rubber, leather, textiles, or painted wood, but also in general did not observe them. If they had observed rubber-like contaminants they would have pulled them out as plastic, and fabric would also have been pulled out as plastic. The physical contaminant definition has an aspect of applicability related to the point in the process where it is employed. It will be relatively easy to see painted wood (for example) in a feedstock, but probably very difficult to distinguish wood that was painted at one time from other fragments in a final compost sample.

Although Ecology is concerned with economic impacts of the rule, we cannot support an approach that transfers the burden of litter to purchasers. Ecology determined that it could support efforts to develop a market for compost products containing up to 0.25% film plastic with certain additional restrictions in place. At WAC 173-350-220(4)(f)(iii)(D)(I) and (II) Ecology inserted the following provisions:

> *(I) Compost facilities must provide a label or information sheet to purchasers of compost that exceeds .1% film plastic by weight but does not exceed .25% film plastic by weight. The label or information sheet must include the statement in (II) below, or equivalent language approved by jurisdictional health department or the department.*
>
> *(II) This compost does not meet Department of Ecology standards for film plastic content for unrestricted use. This compost may only be used in locations where a means of removing or containing the film plastic on site is put in place promptly after use. Acceptable controls include removal from the site, incorporation, planting, covering with soil or another media, or containment in a compost sock or similar device. This product may not be used adjacent to regulated waters of the state (e.g. wetlands, streams, lakes)or in environmentally sensitive areas."*

Ecology believes this language will protect sensitive areas and neighboring properties while allowing composters to explore market potential. The agency believes products with more than 1% by weight of physical contaminants, or more than .25% film plastic, should not be considered products, and remain solid waste. Feedstock suppliers and composters will have to work together to resolve this problem if it occurs.

One commenter was concerned about accountability in local recycling rates for material expected to be composted, but is disposed because it fails the standard for physical contaminants. If organics diverted for composting are so contaminated that they result in an unsuitable end product, they should not be included in the jurisdiction's recycling rate. Regarding the question of

accountability, the system is not perfect and there can be many twists and turns as wastes and products transform and move to their final destinations. The state recycling coordinator notes that for the most part, the impact of failed compost material on various rate components will be sorted out through the information provided by the generators, composters and disposers in the annual reporting process.

Some commenters commented that large pieces of wood should not be considered physical contaminants. Note that the restriction in the definitions regarding wood is for pieces *containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate.* Given that these things are pollutants, Ecology believes the restriction is appropriate.

One commenter expressed concern that the untested fines from construction and demolition debris processing might potentially elevate metals in finished compost. The final rule requires that feedstocks be approved as part of the permit process. While the fines from construction and demolition will undoubtedly contain some organic materials, Ecology questions whether they would be a suitable feedstock. If the commenter on this issue is aware of this material being used as a compost feedstock we recommend they consult with the local jurisdictional health department so a closer evaluation can be made.

Qualitative Standards and Biological Stability

Qualitative standards for compost are found in Table 220-B of the final rule. The agency believes these standards are necessary to protect public health and environment. Qualitative standards are subject to change as new information becomes available. The final rule contains new limits only for physical contaminants. Other parameters were already in the rule.

There were a range of comments and questions in response to proposed changes.

- Most comments objected to the inclusion of parameters perceived as related to marketing but not necessary for protection of public health or the environment
- One commenter wanted to know the source of limits on pollutant metals
- Some comments challenged proposed parameters because no appropriate range or value was specified in the rule
- One commenter suggested adding herbicides as a required analyte, and another expressed concern about pharmaceuticals in general
- One commenter opposed allowing compost derived from certain feedstocks to be used in gardens
- One commenter expressed concerns about composting mortalities and the potential for prion disease in compost, pathogens in manure, and the lack of requirements to test for reportable diseases
- One commenter objected to the requirement for chain of custody on samples

The agency response follows comments below on Qualitative Standards. Comments and Ecology's response on Biological Stability are below those on Qualitative Standards.

Qualitative Standards

Comment: I'm going to start with a commendation. I appreciate Ecology's addressing a couple of things in the original regs; one of them is specifically allowing evaporation to be included in the calculations for leachate and storm water collection. Another is simplifying the sampling and analysis frequency.

Thomas, Terra-Source, Mount Vernon (Public Testimony)

Comment: The only other thing I have to say is I'm going to submit a little written comment on the 220B Table, in terms of the testing requirements. I write big checks all the time to labs, nothing against labs they're great organizations. I just have a concern that maybe there's a few things that we don't need to be testing for and you know I'm just going to submit comment to that effect and I'm going to sort of show you what it's costing me to be compliant. And that's a, remember we want to encourage this practice so let's try not to load too much onto the producer. If you think there's a need for it, there's environmental need for it, there's a regulatory need for it, maybe that's going to prevail, but at least I'd like to open that discussion and so I'll submit written comments on that. Thank you.

Turner, Consultant, West Richland (Public Testimony)

Comment: Please keep the request for total N as part of the new requirements it is important in determining appropriate usage management, marketability and helps manage surface and ground waters in the state of Washington of the compost.

Bary, WSU Cooperative Extension

Comment: Section (10) Composting facilities – Designation of composted materials (permit requirements)

Section (4) Composting Facilities – Operating standards (permit requirements)

Table 220 – B

Split Table 220-B into health and safety parameters (metals and pathogen) and product quality parameters and only require meeting pollutant metals limits to store material off pad. Meeting pathogen reduction PFRP time and temp regimen for off pad storage should be sufficient and final pathogen testing when the product is prepared for sale or shipment off site. Requiring product quality and pathogen testing for off-pad storage would not be representative of product likely sold and shipped months after the material was moved off-pad. Testing for those parameters would be more appropriate at a time closer to the point of sale and/or shipment.

Deatherage, Barr-Tech

Comment: CAFOs should not be allowed to call their compost certified organic, implying it is safe to use though it may have hormones, antibiotics, prions, and metals and pathogens. And if the, if it's, 'cause I've seen examples locally even in the local newspaper where they, these CAFOs are labeling their manure, their compost manure as certified organic. When an organic cow farmer cannot give his cows drugs, but yet you allow manure with drugs in it, that is not safe for humans.

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: Manure is a solid waste the analysis of which should be conducted by a shipment by shipment basis to be determined if it characterizes as hazardous. Manifests for these wastes should be required so that consumers, farmers, and others who may be harmed by their use know who to contact in case something goes wrong. In no circumstances should the generators of these wastes be granted anonymity through exemptions including not requiring manifests. So a lot of people don't know and I think some farmers don't even know that if that once that manure is put on their property, composted or not, it becomes that person's liability. So therefore goes the person who's buying it from Lowe's Hardware. If it has not been tested for prions, if it has not been tested for tuberculosis, and pharmaceuticals, drugs, hormones, heavy metals, we know all that stuff can't be composted out. Then there's problems with that issue and right now it's, I don't think that it is being tested. So that's why we as a health issue, we feel that it should be.

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: Page 29, table 220-B Testing Parameters

Where did the metal limits in this table come from and what is the justification for their use? We could not find the source or the numbers or the science behind them.

Silvestri, Yakima Health District

Comment: 173-350-220(4) Table 220B. Four new parameters have been added to the required analysis in this new table and one has been redefined to the extent that it is meaningless.

The new parameters: EC, C:N, Moisture at 70ºC [which has no meaning?], and organic matter do not pertain to Ecology's mandate of protecting human health and the environment. These are market parameters that need to be left to our markets. My clients test for what their customers want to know. They test the specific piles that make sense to them and their customers and the projects and specifications that pertain to them. These requirements should not be added to a regulatory frequency of testing.

Thomas, Terre-Source

Comment: Many of the new testing parameters listed, such as total nitrogen, C:N ratio, moisture at 70 degrees C (we are unclear what this refers to), % organic matter and electrical conductivity have no acceptable range given and should not be part of testing requirements pertaining to human health and environmental impact concerns. Composters will test for these parameters in order to meet particular end market specifications.

Croll, Seattle Public Utilities

Comment: Also a Plan for the chain of custody is an unnecessary expenditure. Material should simply be able to be taken to the lab and an annual report sent to the Health District.

Harn, Chelan County Public Works

Comment: The new parameters with no ranges, EC, C:N, "moisture at 70ºC"[nonsensical], and organic matter are not health and environment parameters. These are market parameters that need to be left to our markets. We will test or not test these parameters based on the needs of our customers. They should not be included in environmental regulations.

Dressel, North Mason Fiber

Comment: Table 220-B Testing Parameters Moisture at 70C - No range

We assume that this is a typographic error since there is no standard analysis for moisture at 70C.

Wheeler, Lenz Earthworks

Comment: Our members object to the inclusion of many new testing parameters that are purely market driven and have little relevance to human health and environmental concerns. These include electrical conductivity, C:N, moisture at 70 degrees C (*what does this mean?*) and organic matter. No acceptable range is given under Table 220-B Testing Parameters for these testing criteria so why include them at all?

Corum, Washington Organic Recycling Council

Comment: Table 220(B) What is the purpose of requiring analyses for which there is no required limits" These are not health and safety parameters… they are market parameters that should not be required in regulation.

Thomas, Terre-Source

Comment: What is Moisture at 70ºC?? This makes no sense.

Thomas, Terre-Source

Comment: Table 220(B) Biological stability- this is also a market parameter albeit one that was in the last version of the regulations. Once PFRP and VAR have been met additional stability requirement should not be imposed under health and safety requirements.

Thomas, Terre-Source

Comment: Accolade: An across the board testing requirement that all compost must be tested "every 5,000 cy or annually", makes a lot more sense than the current requirements and will streamline testing procedures within the industry.

Thomas, Terre-Source

Comment: Manure should be labeled so consumers are informed that once manure hits their property, it becomes their liability. There should be a penalty and enforcement clause with teeth to protect consumers and their property who use compost and are harmed by it. You hear all the time, the tomatoes, the cabbage, the peanuts, look, people seem to forget about that when it comes to regulations or enforcement. There has been no enforcement in Yakima County against polluters; no enforcement. So we do not want to weaken this by adding more weakness to the law that's already there. Composter facilities digesters should be required to bonded and monitored with random sampling for pathogens, leachate contamination, air quality, and storm water inspections plans.

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: Under physical contaminants, I wonder if we could add pesticides. And I'm specifically thinking of herbicides, and, within the herbicide family, the pyridine family; Aminopyralid, Clopyralid, , Fluroxypyr, Picloram, other related chemistries. We've had two or three significant outbreaks of contaminated composts. It costs a lot of damage to other crop

particularly especially crop producers and I think that maybe is an appropriate thing because of the experience we've had. I see it as a contaminant and I think it's probably appropriate to a list it as a contaminant.

Turner, Consultant, West Richland (Public Testimony)

Comment: Some composted materials may calm gardens and farms and safe for crop production and should be banned; sewage sludge, heavy metals, pharmaceuticals. Not all disease can be composted out of manure. There are over 400 pathogens in feedlot manure. There appears to be no testing for reportable diseases. That's a shame that that is being allowed to happen. So what happens is all this gets passed onto the consumer whether it be a farmer or it be the person who's doing their family garden. Your putting your approval saying that this is a safe product when it may not be.

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: Section (4) (a) (x) (B) states; "Testing frequency is based on amount of composted material produced. A representative sample must be tested for every 5,000 cubic yards produced or every three hundred sixty-five days, whichever is more frequent…."

Deatherage, Barr-Tech

Comment: As a biosolids composter Barr-Tech would like to see some compatibility and continuity in the two composting regulations. In the Chapter 173-308 WAC, Biosolids rule once a month is the most frequent testing requirement for even the very largest facilities. In order to create some compatibility between the two composting rules we would suggest this read; …"*every 5,000 cubic yards produced or every three hundred sixty-five days but not more than every thirty days, whichever is more frequent*….

Deatherage, Barr-Tech

Comment: In general, a number of the proposed changes I believe are perhaps inadvertently moving into the realm of product quality, rather than having any impact on human health and the environment. And I strongly encourage Ecology to revisit these marketing issues and remove them from the regs.

Thomas, Terra-Source, Mount Vernon (Public Testimony)

Comment: And plus the mortality composting I talked about earlier is unsafe for humans and animals. We had the case of mad cow but everybody seems to forget about that, and we don't think it's gone away. So prions cannot be composted out and I don't see where that's addressed on the human health issue. And Yakima County Health Department does not seem to be addressing that issue either.

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: Also, you know in concerns to prions you know that is a different set of rules for composting or management of animal carcasses and you know that's, that's a difficult task. You know, at the university we will not compost bovines over a twenty-four months of age and we do not compost any sheep or wild ungulates, because there is no evidence of prions decomposed in composting processes. But what we do have significant evidence is of the four hundred pathogens

contained in manure, the vast majority of them are easily contained under properly managed composting conditions and that it is why it is a best management practice. Anyway sitting around whether it's a food waste, manure or yard waste given time sitting in a pile is going to generate heat and odors. And what we've found is it's the good management which is what these rules go to, you know improves that as opposed to a pile sitting around and having nothing down the road so that's all I have to say.

Finch, Citizen, Pullman (Public Testimony)

Comment: From my understanding of the previous regulation, testing frequency was dependent upon throughput of specific *Types* of feedstocks, so I'll admit this question may be carryover from that frame of thinking. What is the relationship between the feedstocks below? I.e. *which* is a category of *which?*

- Food processing waste (...material that is generated by a food processing facility...)
- Industrial solid waste (...waste generated from ...food processing...)
- Preconsumer animal-based waste (...collected from food processing facilities...)
- Preconsumer vegetative waste (...collected from food processing facilities ...)

My assumption is that both preconsumer wastes are food processing wastes, but are all three industrial solid wastes?

Durfey, Natural Selection Farms

Comment: Page 29 (x)(B) - at the end of the sentence remove the words ....based on historical data for a particular facility.

Starry, Thurston County Environmental Health

Qualitative Standards - Ecology Responds

Response: A commenter questioned the source of pollutant metal limits in Table 220B. These numbers were originally adapted from standards for biosolids and were not changed in the proposed or final rule. They appear as a change in the text because they were deleted and moved from an original location.

The question of whether a particular characteristic of compost is a marketing concern or a concern for health or the environment can be difficult to assess. Carbon to nitrogen (C:N) ratio tells an experienced person something about the likely availability of nitrogen in a compost product, or conversely the potential for that product to act as a nitrogen sink; it can also give insight into product maturity. The question of whether an analyte relates to marketing or to protection of health and the environment depends on various factors and perspectives.

The agency deleted total nitrogen, electrical conductivity, carbon to nitrogen ratio, moisture and organic matter from the final rule. Throughout the earlier stages of the rule process stakeholders differed on whether or not these should be included in rule or guidance, and Ecology responded by including them in the proposed rule; however they were removed based on comments on the proposed rule.

The presumption of the rule is that sampling must always be representative. The basic frequency is set at once per year or every 5,000 cubic yards. It may be appropriate to reduce or increase the frequency of sampling based on results. Sampling frequency should not be reduced unless the health department is confident of the data. Increasing the frequency will need to be based on

assessment of some data unless the health department can establish more frequent sampling by agreement. Composters should want to collect good data that provides customers with assurances about the product they are purchasing, and operators should not necessarily aim for the least amount of testing possible.

The final rule removed the Type 1-4 definitions, so we no longer depend on the qualifier 'industrial solid waste' to categorize feedstocks that a facility can accept. Each facility must now be permitted for the specific feedstocks they may take, or those restrictions are listed in the terms of the exemption. Both preconsumer vegetative and animal-based waste may be collected from food processors, but they may also be collected from grocery stores, so not all preconsumer waste is food processing waste.

One commenter referred to PFRP (Process to Further Reduce Pathogens) and VAR (Vector Attraction Reduction), and felt once these standards had been attained, the idea of biological stability was relegated to a marketing parameter. The terminology referenced is drawn from biosolids management. The proposed and final rule do not specify processes to further reduce pathogens or vector attraction reduction. Biological stability is important as it indicates whether adequate composting has been carried out.

As noted, one commenter asked the agency to consider the inclusion of herbicides for analysis, and another was concerned about the presence of pharmaceutical compounds. There was no groundwork during rule development that would lead to inclusion of these in the final rule. Either would be significantly more costly than the parameters already eliminated by the agency. We understand the concerns about herbicides. At least for time being, producers will have to find a way to work with this to the extent it remains an issue. As far as pharmaceutical compounds, the strong majority of feedstocks for compost facilities consist of yard waste, food waste, land clearing debris and crop residuals. It is unlikely that significant amounts of pharmaceutical products will be found in compost products overall.

Regarding the use in gardens of compost derived from certain feedstocks, the agency respects the right of individuals to make choices about the products they use. There is no part of the rule that requires composters to tell customers what is in their product. Customers may want to ask the producer if they are curious or concerned. The solid waste permit process requires composters to have feedstocks approved as part of their permitting process, and information on permit conditions can be obtained by contacting the local jurisdictional health department.

A commenter was concerned about composting livestock mortalities and the potential for transmitting prion diseases, and also about the potential presence of pathogens in compost. The rules require testing for fecal coliform or salmonella to indicate if a compost process was effective in reducing pathogens. Prion disease is extremely rare. The solid waste permit process requires all feedstocks to be approved, however, so where the composting of animal mortalities is involved the local health department would make a careful assessment. Composting of bovine and equine carcasses is exempt from solid waste permitting if certain requirements are met. For more information, see RCW 70.95.306- *Composting of bovine and equine carcasses -- Guidelines -- Exemption from solid waste handling rules*. Other animal mortalities may be included as feedstock in some composting processes.

We were puzzled by the reference to a chain of custody requirement, which does not appear in the proposed or final rule. Ecology believes chain of custody is important for compliance sampling. While a little more time and care is required it is not generally a significant cost in a well executed sampling event.

Biological Stability

Several comments reflected confusion as to what test methods should be used to assess biological stability. ***Ecology's response follows these comments.***

Comment: Biological Stability- what test method should be used to determine if a compost is mature? This is an important indicator of when a composted material is ready to be used off site and so some guidance as to the test method should be given.

Croll, Seattle Public Utilities

Comment: Biological Stability- what test method should be used to determine if a compost is mature? This is an important indicator of when a com posted material is ready to be used off site and so some guidance as to the test method should be given.

Jackson, Snohomish County Public Works

Comment: Testing Parameters for Compost (Table 220-B) – biological stability

Finally, what are acceptable test methods for measuring "biological stability"? Stability actually is an important measurement for moving compost off-site but if Ecology is going to require stability testing, it should at least provide guidance on acceptable test methods.

Corum, Washington Organic Recycling Council

Comment: Table 220(B) Biological stability- this is also a market parameter albeit one that was in the last version of the regulations. Once PFRP and VAR have been met additional stability requirement should not be imposed under health and safety requirements.

Thomas, Terre-Source

Biological Stability - Ecology Responds

Tests for biological stability must be done as outlined in the United States Composting Council Test Methods for the Examination of Composting and Compost unless otherwise approved by the jurisdictional health department. Ecology added language to this effect in the final rule. Testing for stability is not a new requirement and composters have not had problems performing this test.

Engineering Reports & Plans

Comments regarding engineering reports and plans reflect differing expectations between Ecology and stakeholders. The requirement to use a professional engineer for design elements is not new, and was brought from existing WAC 173-350-715. Ecology's response appears at the end of all comments in this section. Comments can be summarized as follows:

- Commenters felt there are too many plans in the proposed rule. Facilities already have comprehensive plans of operation and there is unnecessary cost in requiring additional plans that may be duplicative of work in existing comprehensive plans.

- The cost of a licensed professional engineer to prepare plans is significant.
- The use of more templates might help reduce costs.
- A construction quality assurance plan is an unnecessary expense.

Ecology responds following the comments below.

Comment: 173-350-220 (4) Composting Facilities- Operating Standards (permit requirements): (f) pg 33 through (M)(vii) pg 34 This respective rule is proposing the creation of multiple "plans" ranging from community outreach to progressive odor management. All of our facilities currently have very complete and detailed operating plans, which are all inclusive and representative of demonstrated operational prudence, community awareness, and success. This proposal to require a multitude of additional and individual plans would be costly and redundant for our facilities. Plans start on page 33 (f) of the document and go to page 34 (M) (vii) and plans of this nature should be left fully to the discretion of the Jurisdictional Health Department which has most familiarity with specific operations and the adequacy of current operating plans.

Snyder, Waste Connections

Comment: (B) Progressive Odor Management Plan SSOLRI have detailed Plans of Operations for our facilities. Additionally we have detailed Odor management Plans. These plans have been approved by our JHDs after thorough review. Section (B) calls for operational improvements that "could be" made if nuisance odors. are identified beyond the facilities' boundaries. SSO/LRI composting facilities are highly engineered systems. There is a multitude of "what ifs" "then what's" that could be done at our facilities. This is precisely why we hire experts and have regulatory oversight. Therefore, with the state criteria of no nuisance odor at the property boundary and JHD regulatory oversight, the certified compost experts are able to work quickly and effectively to correct the nuisance if one were to occur onsite.

Snyder, Waste Connections

Comment: I've two general comments. One of them is that under the current regulations there have been a number of jurisdictional health districts which have asked and interpreted the requirements for operations plans to be part of the plans, documents, and drawings that should be stamped by a professional engineer.

Thomas, Terra-Source

Comment: Page 36 – 220(9) "within 30-days of completing construction a facility must provide copies and must not begin operating until the JHD has determined construction was completed… etc" There should also be a time frame within which a JHD must complete their determination. Extending this determination time will be necessarily expensive for a facility which has spent significant money to build a facility that cannot be operated.

Thomas, Terre-Source

Comment: All additional studies, plans, reports and/or tests included in the proposal is an increase in beauracracy. Chelan County is not in support of increasing plans where they are not necessary.

Harn, Chelan County Public Works

Comment: A Construction Quality Assurance plan is beyond the Plan to build a facility. A compost facility should be built to the plan, which already is required to be engineered by a certified engineer of the state. This is already costly. The Health District is already charged with approving solid waste permits. This action should serve as the check for the construction assurance.

Harn, Chelan County Public Works

Comment: Page 24. Add traffic patterns to paragraph (b)(ii)

(ii) Scale drawings of the facility including the location and size of feedstock and composted material storage areas, compost processing areas, fixed equipment, buildings, storm water management features where applicable, access roads, *traffic patterns*, and other constructed areas and buildings integral to facility operation;

Brower, Kitsap Public Health District

Comment: WAC 173-350-220(3)(b) The owner or operator of a composting facility must prepare and provide to the jurisdictional health department engineering reports, plans, and specifications that address the design standards of this subsection. The reports, plans, and specifications <u>must be prepared by an engineer licensed in the state of Washington</u>, and must include:

We suggest that rather than require "reports, plans, and specifications be prepared by an engineer licensed in the state of Washington" that a more reasonable standard might be that "reports, plans and specifications must be prepared under the supervision of a professional engineer licensed in accordance with chapter 18.43 RCW".; and, the requirement should include a waiver for operational components and systems that may be pre-engineered. Example text might include: "Upon request of the owner, the department may waive the above requirement for a professional engineer for construction or modification of facilities."

These suggestions are based on the following:

1. A typical engineering firm will often assign tasks to Engineer-In-Training personnel. Including the phrase "under the supervision" allows this common practice.

2. Some "off-the-shelf" operational equipment may be pre-designed by a professional engineer that is licensed in another state. Such equipment, that has a proven design, might be used in an overall site/system design or upgrade.

3. The suggested language is consistent with language used in other similarly complex systems such as wastewater treatment systems (e.g. WAC173-240-160)

Wheeler, Lenz Earthworks

Comment: And on plan of operations, there was sort of a mention, I'd like to see a posting on Ecology's website that has sample plans for each aspect; so sample operational plan, sample odor plan…Make it a fill-in the blank type thing. It'll be just easier for the producers. I'm just you know instead of having to start from scratch, some of them do not have a lot of the expertise; they have to hire somebody like me and pay me money, which I don't mind, but I just think it would be more efficient. And it'll be better. And you will have higher sort of rate of cooperation and you'll get a better initial submittal. You'll have less back and forth to polish up.

Turner, Consultant, West Richland (Public Testimony)

Comment: Under the current regulations there have been a number of jurisdictional health districts which have asked and interpreted the requirements for operations plans to be part of the plans, documents, and drawings that should be stamped by a professional engineer.

Thomas, Terra-Source, Mount Vernon (Public Testimony)

Comment: It appears that the intention of the rule is to allow composters to design and operate "organic" facilities; however as a regulator we need to have the ability to measure the effectiveness of the design and/or operation. It's is our belief that the following comments will enhance our ability to enforce the rule

Design standards (a) – the rule requires that the facilities be designed and constructed in a way that it doesn't violate performance standards. The applicant is required to design a facility that controls odors from migrating beyond property boundaries. The design should take into account porosity, nutrient balance, pile oxygen, pile moisture, pile temperature and retention time. However the rule doesn't give a range of acceptable parameters to measure the effectiveness of the design and/or operation, therefore how do we evaluate if the facility is designed and /or operating properly.

Enger, Snohomish Health District

Engineering Reports and Plans – Ecology Responds

There is a gap between what Ecology expects regarding the contribution of a licensed professional engineer and expectations of the regulated community.

We want to call attention to language in WAC 173-350-220(3)(b) which reads: "(b) The owner or operator of a composting facility must prepare and provide to the jurisdictional health department engineering reports, engineering plans, and engineering specifications *that address the design standards* of this subsection. *The engineering documents must be prepared by an engineer* licensed in the state of Washington, and must include: . .(*emphasis added*)"

The requirement for use of a licensed engineer applies only to aspects of facility design, including the preparation of engineering reports, construction plans and specifications, and the other engineering documents described in subsection (3). The requirement does not apply to preparation of plans of operation or to other aspects beyond the design and construction of a facility.

Further, the requirements for preparation of the engineering documents identified in subsection (3) means that the final documents are prepared under the direct supervision of a licensed engineer. The documents submitted for permit review are to be stamped and signed by the supervising licensed engineer. Ecology does not intend this to mean that no person other than a licensed engineer may have contributed to the development of the documents. This is consistent with Washington State's laws and rules pertaining to licensed engineers, particularly RCW 18.43.070, Certificates and Sealing, and WAC 196-27A, Rules of Professional Conduct and Practice.

Operators may choose to have plan elements and other documents required under other subsections prepared by a licensed professional engineer, but that is an option, not a requirement.

A construction quality assurance plan is already required . The plan can be fairly simple, or complex, depending on the nature of the facility being constructed and the elements requiring validation. It is important, for example, for determining the integrity of liners in leachate

collection systems, and whether asphalt or concrete surfaces can be expected to withstand use over time.

The 2003, proposed and final rule require operators to, "Develop, keep, and follow [abide by] a plan of operation. . ." On review, Ecology has often found plans of operation and similar supporting documents to be lacking for content or detail. The result has been that the agency has often asked for additional information and there have been iterative submittals. The agency has clarified expectations for the contents of the plan of operation required by WAC 173-350-220(4)(f), and in so doing has used the term "plan" generically. In this context a "plan" may not be a standalone document, but an element, section or chapter of a more comprehensive plan of operations which some commenters attest are already in place.

Regarding a range of parameters against which to evaluate design and performance, Ecology recognizes the dilemma. Composting is a dynamic process. While various (potentially well-informed) sources may have specific recommendations, Ecology is unable to provide a specific value or range for parameters to measure effectiveness of design/operation. The combination and interaction of all considered factors influences the ultimate performance of a facility. That being the case, a design or performance value for one factor may be influenced by one or several other factors. Ultimately, facility operators are responsible for establishing operations that yield a marketable final product, as well as for operating facilities in a manner that meets performance standards.

Ecology agrees that the use of fill in the blank templates or sample plans is desirable and can reduce costs. In many cases, there will be substantial differences between facilities, so that it is unlikely a one-size-fits-all kind of approach would work. The agency, however, can outline important content for plan elements so that authors can identify and organize their work more easily. In particular, the agency intends to outline contents for odor management plans at some point following rule adoption.

Groundwater Protection

One commenter expressed concerns for groundwater protection in testimony given at a public hearing. ***The comments appear below, followed by individual Ecology responses***.

Comment: When we operate a wastewater facility like we do in White Swan, we're having the wastewater system evaluated today by Indian Health Service. And one of their recommendations that they've made to us is that it needs to be fully self-contained. It has to have a liner. And one of the other recommendations they have it has to have monitoring wells surrounded; the facility has to be surrounded. Anywhere in this presentation and other ones that I have seen, I've not seen that for cattle operations, or if it is, we wouldn't have had this problem. I don't know why the why it's so different handling human waste than cow waste. I, I don't see the difference because they both cause the same kind of harm to the environment if they're not taken care of properly.

White, Citizen, Toppenish (Public Testimony)

Response: The commenter's observation that both human waste and waste from cattle can cause the same kinds of problems if proper care is not taken is noted and appreciated. There are differences in regulations because of the underlying laws that support them. If implemented correctly, they should accomplish similar goals of protecting public health and the environment.

Comment: I'm a cancer survivor. I've checked my own private well and I've checked my well water for nitrates and my water is safe so far. I'm not on the community water supply in Harrah I

have my own private well. And I just cannot understand and I think Department of Ecology really needs to start looking at if I have to abide by what EPA tells me as a tribal member operating the system for the Yakama Nation, that I have to contain human waste in a liner. I don't know why they don't do the same for the dairy industry. Whether they're making compost or whatever it is, it needs to be self-contained, to where it cannot get into the environment and leach into the ground. Because, and I didn't hear any mention in here about the makeup of some of our lands, some of our lands are clay, but some of them are river rock. Where water just, I mean the waste just goes directly down into the water. I was in Sunnyside over the weekend with my daughter and we were driving by a spray field, and I told, she said "Oh they're sprinkling again." I said "No, that's waste. You see that brown water? It's coming out of that sprinkler head and it's waste water. And it's brown." And I said "And this is the area that's having the problems with their drinking water."

White, Citizen, Toppenish (Public Testimony)

Response: The agency takes note of the commenter's concern. This rule amendment process is focused on composting and other related means of treating organic waste. While we cannot address concerns about spray fields, or what we understand as a reference to differences between liner designs for wastewater lagoons and dairy lagoons, we can address the question of location, design and performance standards for compost facilities.

There are no locational standards for compost and other related facilities in the Solid Waste Handling Standards, Chapter 173-350 WAC. Facilities are required to be located in a manner consistent with local zoning and land use. That decision-making authority is assigned to local governments by state law. It is important to understand that locational standards are different than *design* and *operational* standards. It is beyond the scope of this document to describe all applicable design and operational standards contained in the final rule, but the commenter is directed in particular to WAC 173-350-220(3) and (4).

Also note that Section (3), states in part, *"Composting facilities must be designed and constructed such that: (i) The facility can be operated to meet the performance standard requirements in WAC 173-350-040…"*

The performance standards of Section 040 are excerpted below, which address some of the commenter's concerns.

> WAC 173-350-040 Performance standards. The owner or operator of all solid waste facilities subject to this chapter shall:
> (1) Design, construct, operate, and close all facilities in a manner that does not pose a threat to human health or the environment;
> (2) Comply with chapter 90.48 RCW, Water pollution control and implementing regulations, including chapter 173-200 WAC, Water quality standards for ground waters of the state of Washington;
> (3) Conform to the approved local comprehensive solid waste management plan prepared in accordance with chapter 70.95 RCW, Solid waste management--Reduction and recycling, and/or the local hazardous waste management plan prepared in accordance with chapter 70.105 RCW, Hazardous waste management;
> (4) Not cause any violation of emission standards or ambient air quality standards at the property boundary of any facility and comply with chapter 70.94 RCW, Washington Clean Air Act; and
> (5) Comply with all other applicable local, state, and federal laws and regulations.

Ecology realizes that not all facilities achieve the performance standards consistently, which was a key reason for this rulemaking process. We hope the commenter will agree this is the direction we should be going.

Leachate & Stormwater Management

Ecology responds to comments on Leachate and Stormwater Management following each comment below.

Comment: I'm going to start with a commendation. I appreciate Ecology's addressing a couple of things in the original regs; one of them is specifically allowing evaporation to be included in the calculations for leachate and storm water collection. Another is simplifying the sampling and analysis frequency.

Thomas, Terra-Source, Mount Vernon (Public Testimony)

Response: Comment acknowledged.

Comment: Given that there is an inherent environmental risk in a release from a lined leachate pond, the Department (and the jurisdictional health department) should consider Washington's varied geography and whether the prescribed liner will adequately protect the environment. Therefore, we would recommend a requirement that both regional geology and meteorology be weighed and evaluated when a facility selects a liner and that this provision be inserted into the rule proposal. Additionally, these same factors should be considered and included in the determination, by the jurisdictional health department, of the frequency of liner inspections to ensure that five-year inspections, and not a more recurrent rate, are sufficiently protective of the environment. WAC 173-350-220(3)(e)(iv)(B); WAC 173-350-220(4)(c).

Shanley, Waste Management.

Response: Ecology considers the standards in the rule for leachate lagoon liners to be protective across the state, regardless of geology and meteorology. This could be revisited in a future rulemaking effort. Regarding inspections, the rule says at least every five years unless an alternative schedule is approved by the health department. That schedule could be more frequent.

Comment: WAC 173-350-220(3)(e) Composting facilities <u>must minimize the production of leachate and runoff by designing storm water management features</u> such as run-on prevention systems, which may include covered areas (roofs), diversion swales, ditches, or other features designed to divert storm water from areas of feedstock preparation, active composting, and curing

This section requires the design of storm water management features but does not provide any performance standards. Where a facility is covered by performance standards from a general or site-specific permit this condition should not be applicable.

Wheeler, Lenz Earthworks

Response: The requirement of the rule is to minimize production of leachate and runoff by incorporating design features *<u>such as</u>* . . . The requirement is applicable in all cases, but the type and extent of features depends on the circumstances of the facility. If another permit accomplishes that end, an operator can borrow relevant design and operations information from the other

documentation for inclusion in the solid waste permit application, but they cannot simply defer to a completely separate permit.

Comment: Accolade: Explicitly allowing for the use of evaporation data in the design of leachate and stormwater collection structures is important especially in Eastern Washington. Evaporation is a significant force in some areas and not allowing for that can result in excessively large ponds that are overdesigned and un-necessarily expensive.

Thomas, Terre-Source

Response: Thank you.

Comment: Page 25, paragraph (i) Add feedstock storage areas to following paragraph.

(i) Composting facilities must manage any leachate generated at the facility by providing leachate management features. The leachate management features include, but are not limited to, leachate collection, conveyance, and storage structures, or treatment systems. Leachate must be collected from areas of feedstock <u>storage and</u> preparation, active composting, and curing, and be conveyed to a leachate storage structure or treatment system. Any discharges to ground that result in contaminants migrating to groundwater require a waste discharge permit under chapter 90.48 RCW, Water pollution control, prior to discharge. Discharges to ground that result in degradation of groundwater quality are prohibited under chapter 90.48 RCW, Water pollution control. Any discharge to sanitary sewer requires additional permitting by the local delegated authority or department;

Brower, Kitsap Public Health District

Response: Leachate collection for feedstock storage areas was added to the rule.

Comment: 173-350-220(4)(g)(ii) My compost ages for 2- to 3-years [because of the particular feedstocks] to prepare the highly mature, high quality bagged compost that I market. If I have to collect leachate around all my finished compost piles (which means installing compost berms, pumping leachate, installing another tank, moving the berms whenever the piles are added to or otherwise managed), the cost of equipment fuel alone could make composting not viable for me. If you are quite sure finished compost is a threat to human health and the environment so that you must regulate it, please a) show me your data indicating that fact, and b) address the specific problems where they occur rather than forcing my facility to jump through expensive hoops with no environmental benefit.

Dressel, North Mason Fiber

Response: Leachate collection is not required in areas where finished product is stored. That does not authorize offsite impacts to water quality that is protected under federal and state water quality laws. Facilities failing to meet stormwater benchmarks may need to put in additional infrastructure to meet water quality regulations.

Comment: 220(3)(e): "Minimize production of leachate and runoff by…" Why if it's managed? Especially on the Eastside water availability is limited. It might be most efficient to mix and use run-off to optimize compost moisture content & prevent excessive use of well water

Thomas, Terre-Source

Response: The rule is concerned with liquid that must be disposed or discharged off site. In drier climes it may be appropriate to capture leachate and return it to the process.

Closure & Financial Assurance

The agency received only one comment addressing closure and financial assurance.

Comment: We recommend that the requirements for closure be clarified and detailed in the Department's proposed rule amendments. Specific reference should be provided in a facility's closure plan to the total quantities of received feedstock and finished composted material that could be expected on site at any one time, based on the annual volume of material managed at the site. The closure plan should also require and include cost estimates for the transportation and disposal of this specified amount of material. Additionally, some type of financial assurance instrument (for example, a surety bond or letter of credit) should be required in the amount of the calculated cost estimate. Finally, the closure costs should be reviewed and updated, if necessary, annually. Please refer to composting facility standards in Wisconsin, New York, and Pennsylvania for detailed requirements regarding closure costs and financial responsibility. WAC 173-350-220(6); WAC 173-350-220(7).

Shanley, Waste Management

Response: The rule holds the owner or operator of a facility responsible for the financial costs of closure, and requires a closure plan that assumes the facility to be at full permitted capacity at the time of closure. The agency did not lay any groundwork to require a financial assurance mechanism in this rule, which would have added cost to the rule. The agency believes however that the approach outlined is adequate. A compost facility is not a disposal site. The property will have value at closure, and it is possible that unsold organic material will also have value. Ultimately, if there is a question of financial responsibility or ability to close a facility, it may have to be resolved legally.

Conflict with Biosolids Rules

There was strong opposition to proposed changes regarding reciprocity with the state biosolids program administered under Chapter 173-308 WAC. No commenters supported the new language.

- Commenters argued that biosolids are not, by definition, solid waste, and solid waste regulations should not apply when biosolids are composted with other materials.
- Commenters expressed concern about duplicative permitting under both solid waste rules in Chapter 173-350 WAC and biosolids rules in Chapter 173-308 WAC.
- One commenter wanted more equity in testing requirements between biosolids composting and solid waste composting.

The agency response follows comments below.

Comment: Section (a); this section is very confusing. There seems to be a circular reference. It states that …"*This section does not apply to: … (v) Composting biosolids when permitted under chapter 173-308 WAC* … then section (B) states that the permit must "*meet or exceed the requirements of this chapter…*" so a permit must apply the rule before the rule does not apply.

Are biosolids included or excluded from this rule? Once biosolids are mixed with solid waste, are they regulated as a solid waste or are they regulated as biosolids?

It appears if you compost both solid waste and biosolids there could be a dual permit requirement? Was that the intent? When conflicting requirements exist which one is followed?

Deatherage, Barr-Tech

Comment: Remove the dual regulation requirements for biosolids compost quality and facilities that happen to take both biosolids and other organic waste.

Corum, Washington Organic Recycling Council

Comment: Section (4) Composting facilities - Design Standards (permit requirements)

Section (4) (a) (x) (B) states; "Testing frequency is based on amount of composted material produced. A representative sample must be tested for every 5,000 cubic yards produced or every three hundred sixty-five days, whichever is more frequent…."

As a biosolids composter Barr-Tech would like to see some compatibility and continuity in the two composting regulations. In the Chapter 173-308 WAC, Biosolids rule once a month is the most frequent testing requirement for even the very largest facilities. In order to create some compatibility between the two composting rules we would suggest this read; …"*every 5,000 cubic yards produced or every three hundred sixty-five days but not more than every thirty days, whichever is more frequent*….

Deatherage, Barr-Tech

Comment: Biosolids – Conflicting Dual Regulations

In consultation with the King County Wastewater Treatment Division, we understand that composting facilities that process biosolids could potentially be subject to conflicting regulations under both WAC 173-350 and WAC 173-308. WAC 173-308-060 (2) states "Biosolids are not a solid waste and are not subject to regulation under solid waste laws." Biosolids are not typically regulated by local Health jurisdictions. There are differences in the testing parameters and testing standards for a biosolids based compost versus one produced from only yard debris and food scraps. The biosolids quality standards in WAC- 173-308 are based on extensive scientific risk assessment that protects public health and the environment. Operating standards could be incorporated into the biosolids rule rather than creating a conflicting and duplicative state regulatory structure for biosolids. We encourage Ecology to clarify in the revised rule that biosolids are not regulated as solid waste under WAC 173-350 since they are covered under WAC 173-308.

McLaughlin, King County Solid Waste

Comment: We urge the DOE to keep the current standards for biosolids compost and to clarify that biosolids compost <u>not</u> be regulated as solid waste under WAC 173-350. The biosolids quality standards in WAC 173-30 are based on extensive scientific risk assessment that protects public health and the environment. Is there evidence that these are not adequate?

Kato, City of Tacoma Public Works

Comment: WAC 173-308-060 (2) Biosolids not classified as solid waste. Ecology's Biosolids Management rule clearly denotes that biosolids are not to be considered solid waste and are

therefore not subject to regulation under solid waste laws. The proposed Solid Waste Handling revision would be inconsistent with the State's biosolids management rule.

The NBMA is seeking clarification on the need for additional regulations on biosolids. Why is there a need for additional, more stringent biosolids compost regulation and oversight? There are quality standards for the beneficial reuse of biosolids and biosolids products (compost) in WAC 173-308-160, Biosolids Pollutant Limits. Is there evidence that shows an environmental or public health threat from the creation, management or use of biosolids compost in Washington State that indicates the existing standards are not adequate? If operating standards for biosolids composters are necessary to minimize odors etc, those operating standards could be incorporated into WAC 173-308 or a permit issued to the biosolids composter from Ecology.

Cooper, Northwest Biosolids Management Association

Comment: Composting facilities that process both biosolids and the organic fraction of mixed solid waste (such as yard debris and food scraps) could potentially be subject to conflicting regulations under both WAC 173-350 and WAC 173-308. WAC 173-308-060 (2) states "Biosolids are not a solid waste and are not subject to regulation under solid waste laws". Biosolids composting, is not typically regulated by local Health jurisdictions. There are differences in the testing parameters and testing standards for a biosolids based compost versus one produced from only yard debris and food scraps. The biosolids quality standards in WAC-173-30 are based on extensive scientific risk assessment that protects public health and the environment. It does not make sense for a biosolids composting operation to be permitted by Ecology under WAC 173-308 and then also be regulated under WAC 173-350 by local health jurisdictions. We urge Ecology to clarify in the revised rule that biosolids composting and biosolids compost are not regulated as solid waste under WAC 173-350.

Corum, Washington Organic Recycling Council

Comment: Biosolids Composting - This requirement effectively imposes conditions of this regulation on permits issued and managed under 173-308. Have these facilities and department been adequately informed and allowed to comment?

Thomas, Terre-Source

Conflict with Biosolids Rules - Ecology Responds

As there was virtually no support for this proposal, the agency removed the language, but offers an explanation.

It is correct that biosolids are not solid waste, and it is correct that biosolids mixed with solid waste are still biosolids and remain subject to biosolids rules. No rule relieves 'a facility that receives solid waste' from solid waste permitting because it is eventually combined with biosolids and composted. Potentially both biosolids and solid waste rules apply. When adopting state biosolids program rules, the agency recognized the potential for a duplicative permitting process and wanted to avoid that. This was addressed originally in the state biosolids program rules at WAC 173-308-310(1)(a):

> *Permitting exemption for some composting facilities. Facilities that compost biosolids or sewage sludge do not require permitting under this chapter if all of the following conditions are met:*

(i) A permit is not otherwise required in order to comply with the Federal Clean Water Act.

(ii) The department and local health jurisdiction agree that a permit issued by the local health jurisdiction will be adequate.

(iii)The conditions of the permit issued by the local health jurisdiction meet or exceed the requirements of this chapter.

(iv)The department does not otherwise find that a state-issued permit is necessary because one or more of the conditions in (b)(i) through (iv) of this subsection exists.

This approach was possible because under federal rules, biosolids composters are considered "sludge only" facilities. That means the EPA did not have a specific permit expectation for those facilities as it does with wastewater treatment plants that produce biosolids. Ecology found a solution that fit federal expectations and reduced the permitting burden. Over time as the state biosolids program developed, most health departments chose to focus on other classic solid waste activities and found it hard to maintain expertise in biosolids management or to justify the cost of program implementation. While some partnerships still remain for the regulation of biosolids, including compost facilities, Ecology now handles many biosolids compost permits.

In proposing this new language under Chapter 173-350 WAC Ecology attempted to create a reciprocal arrangement, thus ensuring that standards acceptable to both Ecology and a local jurisdictional health department would be met for a biosolids compost facility. It is still possible to do that without the proposed language, and without two permits.

Regarding the questions of aligning sampling requirements between the two programs, that can be problematic. The frequency of sampling established in Chapter 173-308 WAC is based on federal rules and is the *minimum (not* optimum*)* frequency of sampling. Additionally, frequency of sampling says nothing about the number or type of samples taken in any one event. Any compost facility using biosolids as a feedstock is marketing or using a product with which the public may have very close contact. It is essential that all producers of *exceptional quality* biosolids products are focused on assuring the safety of their end product in all regards.

Agency Coordination

A number of comments addressed the approval process for various permit elements. One commenter proposed that if air elements were adequately addressed through a permit issued by the local clean air authority, that should be adequate, and air related elements of the permit/planning process could be deferred. Another commenter, however, opposed that idea. In general commenters expressed uncertainty about roles and responsibilities in the permit process, and one commenter reflected that there are too many agencies an individual citizen has to go to in order to get help.

Ecology's response follows the comments below.

Comment: Cedar Grove expresses strong concern about the redundant regulations created by this rule. While we recognize the Department would like to have compost rules that regulate all aspects of a facility, most facilities already operate under very specific permits issued by several agencies for various aspects of their operations.

The composting industry is under economic pressure from many avenues, and redundant regulations should be removed from this rule making. For example, stormwater plans under Department of Ecology Stormwater Division should be sufficient for dealing with stormwater and additional plans should not be necessary. Air quality permits under existing air agencies should be sufficient for dealing with odor and dust emissions. Construction records should not have to be provided and approved by the jurisdictional health department if those construction activities were permitted by another agency. Any permits that exist at composting facilities that deal directly with an environmental concern should have primacy over the requirement for additional plans in the composting facility management standards. If facilities do not have these additional permits, then plans for these aspects should be required. Any existing water or air permit should be sufficient in controlling environmental harm.

Facilities, like Cedar Grove Composting, operate under multiple jurisdictions which regulate air, stormwater and health. The following are examples of current regulatory oversight:

Air permits for example have requirements for:

1) Facility wide inspections for odors
2) Facility wide inspections for dust
3) Composting process controls
4) Leachate control and use
5) Odor complaints including complaint response program
6) Air pollution control device performance and testing
7) Biofilter review audited by independent third party twice per year
8) Emission of air contaminant standards: (detriment to person or property i.e. PSCAA 9.11)
9) Nuisance odors, if they become an issue, are already regulated by local air authorities which include odors from finish compost piles as well as every other part of a compost facility operation.

Stormwater permits also have a wide range of requirements:

1) Leachate and stormwater drainage system
2) Inventory of materials
3) Stormwater pollution and prevention team
4) Preventative maintenance
5) Spill prevention and emergency cleanup plan
6) Employee training
7) Inspections and recordkeeping
8) Structural source control best management practices
9) Treatment best management practices
10) Erosion and sediment control best management practices

11) Stormwater peak runoff rate and volume control best management practices
12) Stormwater sampling plan

These are only a few examples where multiple agencies requesting the same type of plan, but not necessarily approve the same methodology for environmental control, can cause a facility to be out of compliance with one permit due to conflicting requirements. The only way to resolve the issue is to eliminate proposed requirements that would require duplicate plans or permits when they are already in place. The Clean Air Act or Clean Water Act agencies should have primacy over these areas.

Bartlett, Cedar Grove Composting

Comment: Operations Plan Review Question**.** Which regulatory agencies will review and approve the "progressive odor management plan" proposed to be required in the facility Operations Plans - only the jurisdictional health departments or both the health departments and regional air authorities? Will DOE provide health departments with some guidance on what is expected to be covered in these plans?

Croll, Seattle Public Utilities

Comment: The new requirements for more detailed sections of facility Operations Plans regarding odor management, community relations and stormwater management begs the question of how many agencies will actually need to review and approve various elements of the Plans. The jurisdictional Health departments approve these plans and issue the solid waste permits but they are not the regulators in the case of odor complaints, air quality or stormwater management issues.

Corum, Washington Organic Recycling Council

Comment: We believe requiring a detailed plan of operations as part of the permitting process will help improve environmental performance of large scale composters…

…The question remains, however, which regulatory agencies will review and approve the "progressive odor management plan" proposed to be required in the facility Operations Plans only the jurisdictional Health Departments or both the Health Departments and regional air authorities?
McLaughlin, King County Solid Waste

Comment: On matters relating to odor and dust, obviously here in Yakima County it's been clarified that YRCAA, Mr. Pruitt's agency would be the lead agency on that. I think that's appropriate. A lot of the people who are going to be involved in composting here, particularly if you think of volume, the dairy industry is either number one or number two. And they will do a lot of composting work. And, I'm just wondering if it would appropriate because we have a very detailed, well developed air program for dairies through YRCAA. If maybe DOE could make reference to that; and if the facility is already under the YRCAA, Air Quality Program then that should pretty much exempt you from anything else because that's a more stringent; it's a direct examination and testing type of a program. And, that would just seem to me to be simplified.

You've got something right off the shelf with another local agency that's work for two and a half years to develop it. And, that just seems to me to be a really good, a really good fit.

Turner, Consultant, West Richland (Public Testimony)

Comment: Just a comment about what Stewart said about Yakima Regional Clean Air. They have no citizens or environmental groups on their committee that decided to do the dairy air testing. They also are not using any scientific equipment to do that. So before you embrace them, you need to check out what their methods are.

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: Also, we prefer to have Ecology have jurisdiction over this than Department of Ag. Because when the Department of Ag is involved, it is a conflict of interest, there is no enforcement in Yakima County. Let me repeat that. The Health Department there has been no enforcement with that. So what happens is when you pass things, when you make more things lenient, the people of this valley suffer. The reason I asked you the question about manure being taken to another place and worked on; Yakima County allowed compost material to be taken by put in the city limits of Granger near a trailer court and that's where the man operates his facilities. In Yakima County things are allowed in flood plains. It doesn't matter where it's at. I have a friend who has a lagoon right next to their house.

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: I would like see, that facility in Granger, I would like to see what the footage, have the footage, ask citizens about that and scientists about how far away you can locate one of these facilities next to somebody's home, a church, a school, because a there is a safety issue with human health with that too.

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: I'm a grandmother and a parent from Harrah, it's a little town of 400 people and we didn't know what a CAFO was 20 years ago and now we're inundated in the Yakima Valley. There are more now more cows, 215,000 or more, than people. We've become known as the toilet bowl of the state here. Seattle brings their human poop over here and now we have all these CAFOs with all the manure here and it's been a big issue. The environmental justice community with the EPA has become involved. They are working with the citizen committees here to examine the full scope and they have found five dairies responsible for a lot of the pollution. So of what we want to say to you is poop is not more important than people; neither is the money behind it. A lot of this stuff has contaminated wells and our breathing air is not.. safe to drink.. or to smell anymore.

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: So I, I think, there, there are too many agencies that people have to go to in order to protect the water. You have to go to the Department of Ecology. You have to go to the jurisdictional health department. Then I understand now you have to go to Department of Ag. So you've got to figure out whose door to knock on. And to me, when you are trying to protect the environment, uh Drinking Water Resource, that's just too many agencies to go see. That's just too many agencies to spread this resource out, the protection of this resource. I've also on the drinking water side, EPA is under, Yakama Nation is under the jurisdiction of EPA.

White, Citizen, Toppenish (Public Testimony)

Comment: Issues clarifying Odor Management Plans, and the roles and authorities of the regulating agencies remain unclear and unsettled at least in the minds of industry members.

Lovaas, Washington Refuse and Recycling Association

Agency Coordination – Ecology Responds

Ecology supports ongoing efforts to streamline regulatory processes. While there may be overlap between certain regulatory programs, the bulk of environmental aspects addressed by clean air agencies are different than those addressed by Ecology; the stormwater program implemented by Ecology addresses elements not captured by the solid waste permit, and vice versa. In addition, there are at least three different jurisdictions involved. There are resource and implementation considerations as well. The fact that one entity has a program in place does not mean that it has the ability to implement it in a way that would supplant the contributions of an overlapping program. Comments of citizens reflect a similar frustration – the number of governmental agencies they may have to deal with in order to solve a problem or get help. The required expertise and appropriate authority do not all exist within the same agency. Local governments in Washington are responsible for administering growth management planning and land use issues, and they are responsible for issuing solid waste permits. In some parts of the state, Ecology has authority for air quality issues, but in others, local clean air agencies have authority.

The solid waste permit issued by the local jurisdictional health department should be the key to success in achieving compost facility compliance with performance standards. The goal of the solid waste permit should greatly reduce the potential for offsite impacts from compost facilities, thus lessening the need for and burden of other regulatory programs having to contend with offsite impacts. This does not mean that all matters can be addressed or solved by solid waste permitting.

The agency eliminated the language regarding a progressive odor management plan from the final rule. The reasons are discussed in the Progressive Odor Management Plan section of this document. Ecology still plans to provide guidance for odor issues at compost facilities.

As for the review and approval process, Ecology expects that it will work cooperatively local health departments, providing support in the review process. During those reviews both Ecology and local government may draw on the expertise of other agencies. The local jurisdictional health department has final responsibility for approving permits.

The agency acknowledges citizen concerns about groundwater quality and the number of regulatory agencies they must work with. Regarding the details for any specific facility (such as the one referenced above in Granger, commenters are directed to the local permitting authority. There are no locational standards for compost facilities under solid waste rules. This is an issue that must be addressed through local zoning and land use planning.

Enforcement

Citizens attending a public hearing in Yakima provided comments on the subject of enforcing rule and permit requirements. ***Ecology's response is at the end of the comments***.

Comment: I think first I'd like to begin with enforcement there really hasn't been a discussion of enforcement but with every set of regulations enforcement comes. I would like to see as a departmental philosophy, an enforcement policy that seeks cooperation first and foremost with the individual producers at issue and is educationally based. If you come to a facility for one of my clients, you see something that's not right or you receive a report and you investigate. Something doesn't appear right. Please come to us. Tell us. Work with us cooperatively. Try not to bludgeon us, fine us, and otherwise be punitive in nature because, people tend to be a lot less cooperative when they are being clubbed. So, I just want to, as a general philosophy, encourage the agency in the enforcement roll which is an appropriate roll. You know to try and work cooperatively, assuming there is an appropriate attitude on the part of the producer.

Turner, Consultant, West Richland (Public Testimony)

Comment: Also, we prefer to have Ecology have jurisdiction over this than Department of Ag. Because when the Department of Ag is involved, it is a conflict of interest, there is no enforcement in Yakima County. Let me repeat that. The Health Department there has been no enforcement with that. So what happens is when you pass things, when you make more things lenient, the people of this valley suffer. The reason I asked you the question about manure being taken to another place and worked on; Yakima County allowed compost material to be taken by put in the city limits of Granger near a trailer court and that's where the man operates his facilities. In Yakima County things are allowed in flood plains. It doesn't matter where it's at. I have a friend who has a lagoon right next to their house.

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: Manure should be labeled so consumers are informed that once manure hits their property, it becomes their liability. There should be a penalty and enforcement clause with teeth to protect consumers and their property who use compost and are harmed by it. You hear all the time, the tomatoes, the cabbage, the peanuts, look, people seem to forget about that when it comes to regulations or enforcement. There has been no enforcement in Yakima County against polluters; no enforcement. So we do not want to weaken this by adding more weakness to the law that's already there. Composter facilities digesters should be required to bonded and monitored with random sampling for pathogens, leachate contamination, air quality, and storm water inspections plans.

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: The gentleman prior said enforcement, you know be a little bit more lenient on enforcement. I think enforcement has to be there. I followed this process when it first came out in the Yakima Herald. These people that had no place to go. Each door they knocked on nobody was able to tell them who would take care of the problem, when they had bad drinking water, and we are that way again today, still. You knock on somebody's door and who takes care of it; you don't know who's going to take care of enforcement. When you already have contaminated water. It's seems the analogy is go ahead and operate until you contaminate and then remediate. Which to me

I think is kind of ass backwards. I think it needs to be turned around. We need to protect our resources before we contaminate them.

White, Citizen, Toppenish (Public Testimony)

Comment: Voluntary does not work in Yakima County. We have industry here that has ignored voluntary for twenty years. They've called them best management plans, nutrient waste management plans. That's how we got in the mess we're in. They said they are using high tech. That's how we got in the mess we're in here in Yakima County. Voluntary never works when it comes to industry.

Whitefoot, Citizen, Harrah (Public Testimony)

Comment: The only reason that I came here today is because this agency, as well as others, have the responsibility to protect our resources which is surface and drinking water; because, the jurisdictional department of health, especially for this area, does little or no enforcement. They issue permits to do the work, permits to go ahead and operate a facility but they lack total enforcement. And I think to me that's dangerous in this area especially if we have enforcement, if we have this jurisdictional health department, why do we have the problem that we do in the Selah? I mean the Sunnyside, Mabton and those areas; why do we have that problem today if these agencies are supposed to be doing the work that they're doing? It shows there's something systematically wrong with this whole setup, and I think uh State of Washington really needs to take a look at putting protection of resources ahead of making the dollar. To me that's what's happening is we want to employ a lot of people, yes, I depend on money to buy gas. I had to be up here in a vehicle, so I have to depend on money I work, but in that process what are we doing to our environment?

White, Citizen, Toppenish (Public Testimony)

Comment: The end result of contaminated water is we have to treat it. And that's one of things as an operator of a water system. EPA has mandates to us that we have to test for certain constituents in our water. And that costs when we bring a new well on line, that costs for one well about $15,000 because we have to do quarterly sampling for all of those constituents. $15,000 for one well. And to me, when we have the economy that we do in Yakima Valley, in our area, you got a lot of low-income families that live there that cannot bear the costs of those kinds of costs associated with having, 'cause you have to pass that on to somebody; you have to pass those costs onto the consumer. And everybody says "Oh, everybody eventually is going to have to get on a community water system." Yeah, we're going to be forced to. Because, there is no regulation, within this area, as far as regulating these kinds of facilities that we're talking about. So I think as far as coming from a rural area, one of the greatest concerns I have and I've never seen it, yet. When we first started this, we had all of the agencies put up all of their responsibilities on walls, all the way around and they put all of their responsibilities. But there wasn't anybody that wrote anything regulatory. And I asked because we had all of those agencies there at the time. I asked "Who is regulatory here?" We had licensing, but we did not have anybody regulatory. And to me that's absent, that's very absent. And we need to start protecting you know the people that live within this reservation because our water resources aren't going to be here forever especially if we allow business to take over, and regulate based on how many jobs they produce in this valley.

White, Citizen, Toppenish (Public Testimony)

Enforcement- Ecology Responds

Response: Ecology acknowledges citizen concerns about enforcement of environmental rules. Some commenters asked for an educational approach ahead of enforcement; others asked for more enforcement and environmental protection in general.

This rulemaking revises the rules for handling organic wastes under Chapter 173-350 WAC, *Solid Waste Handling Standards*, so it does not extend to resolving the kinds of enforcement concerns expressed above. Ecology is aware of groundwater quality issues in the Yakima Basin. However, we are not aware that those problems are related to the production or use of compost, or the organic waste management facilities being addressed in this rule process.

The rules that compost facilities must comply with are intended to protect land, air, water, and public health from offsite impacts of the composting process as well as ensure that compost products are safe to use for their intended purpose. Ecology is responsible for writing the regulation, but the Legislature gave authority for permitting and enforcement of permits to local jurisdictional health departments.

In response to comments about land use planning under the state's Growth Management Act and the basic functions of zoning and local land use, these functions, like solid waste permitting, are assigned to local government. Solid waste rules require consistency with local land use. A compost facility could not, for example, be placed in an area zoned as residential. The agency could not support a permit issued contrary to local land use laws, but also expects local jurisdictional health departments will assure compliance in that regard before issuing a permit.

Ecology will continue working with local health departments to assist them in implementing local programs, and that may involve technical assistance where compliance or enforcement are issues.

Training

The agency responded to each comment on training individually below.

Comment: Training is required in the new rule does that mean all facility managers will need new training under the rule or will previous training be Ok if it can be documented?

Bary, WSU Cooperative Extension

Response: Previous documented training may meet the requirement. WAC 173-350-220(4)(a)(vi)(A) reads in part, "*Facility supervisors responsible for daily operation must receive training, <u>or be able to document prior training</u>, in the basics of composting within the first year of supervising the facility. . .(emphasis added).*"

Comment: Required Facility supervisor training description:

Section 173-350-220(4)(a)(vi)(A) most directly targets a portion of my business by requiring facility supervisors to receive "appropriate training…through organizations such as WORC, SWANA, USCC or other training as approved by the JHD". Because there is no guidance as to what criteria could be used to approve a training program, the training that my clients ask me to provide might not be accepted purely due to lack of time or guidance to approve it.

I provide on-site training in the basics of composting and more. My training occurs on that client's specific technology, facility, and feedstocks, which is most relevant to a composter. Also, I train directly to their Operations Plan and permit so they can fully understand the implications and requirements that are in those documents. I believe this is actually more valuable to my client and to the industry and to the JHD and Ecology because my clients/students are going to know the regulations that directly affect them and are going to be more likely to compost well and within their permit than if they only got generic basic composting training. The WORC and other national compost training is very valuable – but so is mine. If the goal of this regulation is to educate composters in the ability to compost under the applicable regulations and in an environmentally responsible manner on their own facility, my training is equally or more efficient. What additional (unpaid for) steps will my company have to perform to be "approved" by the 35 JHDs in Washington state?

I would prefer this section be worded:

(A)"Facility supervisors responsible for daily operation must receive training or be able to document training <u>or competency</u> in the basics of composting <u>before</u> <u>the end</u> of the first year of supervising the facility. Training must consist of basic compost theory as well as hands-on <u>or on-site</u> course work and conclude with a certificate of completion that must be kept on-site at all times."

Removing the following sentence that suggests "~~appropriate compost training…~~" by "~~organizations such as…. or other training as provided by the JHD~~" would remove the implied negative connotation of "other training…". Such promotion should be in guidance or informally provided – not written into the regulation.

Thomas, Terre-Source

Response: WAC 173-350-220(4)(a)(vi)(A) reads, "*Appropriate compost training can be obtained through organizations such as the Washington organic recycling council, the Solid Waste Association of North America, the U.S. Composting Council, <u>or other training as approved by the jurisdictional health department (emphasis added)</u>.*"

This wording is not meant to imply that "other training" should be seen in a negative light. "Other training" was specifically included to allow for trainings other than that given by professional organizations. Organizations can tap a broad range of expertise and have the resources to produce structured training events. However, if the commenter can obtain the endorsement of a local jurisdictional health department, their training will be acceptable in that jurisdiction.

Comment: Please offer workshops to LHJ's on the new rules after they are adopted.

Starry, Thurston County Environmental Health

Response: Ecology will provide briefings or training as appropriate after the rule is adopted.

Comment: Page 28 (vi)(A)

- It would be more efficient if training programs and curriculum were approved by Ecology, rather than making each LHJ responsible. An alternative could be to allow LHJs to approve alternative training programs for small or simple compost proposals.
- Is there a better term than "hands-on" to describe the desired training? Maybe something like "Training must consist of classroom and field/laboratory course work that…"

Starry, Thurston County Environmental Health

Response: Comments noted. The agency did not change the reference to hands-on. At this time the agency is also leaving approval of alternative training programs to the discretion of the local health department.

Comment: Page 28 - (vi)(A) and (B) - Where are the training records kept and how long?

Starry, Thurston County Environmental Health

Response: Ecology did not consider the question posed by the commenter as part of this rulemaking. As the rule is written, supervisors must have documentation kept on site at all times. The retention period is permanent. The facility plan of operations must describe how employees will be trained. It is the obligation of the operator to be able to demonstrate compliance with this requirement

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Permits and Exemptions

Ecology has responded individually to the following comments

Comment: Finally, it seems odd that while the Department is attempting to increase regulatory requirements for existing facilities, it is at the same time looking at increasing volumes allowed at exempt facilities. At these exempt facilities, there will be no oversight for this material and no permitting process where communities can comment on expanded operations. This does not seem to be in the best interest of human health and the environment.

Bartlett, Cedar Grove Composting

Response: In broadening exemptions and expanding thresholds for exemption, Ecology attempted to balance consideration of public health and environmental protection while encouraging small businesses and innovative technologies. These facilities are small by comparison with some of our permitted facilities. We believe the agency took steps in the right direction.

Comment: There needs to be an allowance and procedure for running a pilot test on a new technology or new feedstock without going through an entire permit revision or permit process. Facilities could then determine how and if a particular process/feedstock works as well as being able to "demonstrate" as in (4)(a)(vii)(D) "an equivalent reduction of human pathogens"… or other aspect.

Thomas, Terre-Source

Response: There is no provision in statute or rule that explicitly allows for pilot projects. The local jurisdictional health department should be the first point of contact for any proposed solid waste management activity that may require a permit.

Comment: Page 21, Paragraph (c)(ii) (i) Comply with the performance standards of WAC 173-350-040;

(ii) ***Protect surface water and groundwater through the use of best management practices and all known available and reasonable methods of prevention, control, and treatment as appropriate. This includes, but is not limited to, setbacks from wells, surface waters, property lines, roads, public access areas, and site-specific setbacks when appropriate.*** Manage the operation to prevent the migration of agricultural pests identified by local horticultural pest and disease control boards, as applicable;

(iii) Control nuisance odors to prevent migration beyond

Add back in deleted language. Because the quantities of exempt composting are so substantial, it is important that these facilities maintain setbacks to surface water and wellhead protection zones for Group A and Group B wells.

Brower, Kitsap Public Health District

Response: The deleted language was considered redundant. Exempt facilities must comply with WAC 173-350-040. Subsection (2) requires compliance with chapter 90.48 RCW, Water pollution control and implementing regulations, including chapter 173-200 WAC, Water quality standards for ground waters of the state of Washington.

Comment: It appears that the intention of the rule is to allow composters to design and operate "organic" facilities; however as a regulator we need to have the ability to measure the effectiveness of the design and/or operation. It's is our belief that the following comments will enhance our ability to enforce the rule.

Conditionally exempt facilities should be required to submit an operational plan describing their compost operation. From our experience exempt composters use the exemption to accept regulated solid waste and are unable to effectively compost the waste. The operation plan would demonstrate composting knowledge and would make our evaluation process more efficient.

Enger, Snohomish Health District

Response: Ecology understands this concern, but believes it is important to relieve relatively small facilities that pose relatively small risks of some of the administrative burden associated with solid waste permitting. Requiring operations plans for exempt facilities would, as the commenter points out, subject these facilities to a regulatory evaluation. All facilities must comply with the performance standards of WAC 173-350-040, and those in the second tier still have notification and reporting obligations.

Comment: Composters should not be exempt from any of these permits you were talking about. They should also be sustainable and they should not get government subsidies to operate.

Whitefoot, Citizen, Harrah (Public Testimony)

Response: Ecology believes that exemptions make sense for some small compost facilities. Many compost facilities (at schools for example) are quite small and pose little risk. This rulemaking process did not address issues of government funding for compost facilities and Ecology can offer no comments in that regard.

Other Organic Material Handling Activities

Most of the comments the agency received on proposed Section 225 – *Other Organic Material Handling Activities* – were submitted by one commenter. Although the rationale in some of the comments could be extended to other aspects of the rule, the commenter was specifically concerned with aspects of the rule relating to Section 225. The agency is responding to the submittal here as one item under Section 225.

Ecology responds to comments individually below.

Comment: Page 37 Table 225-A Terms and Conditions for Solid Waste Permit

Exemptions, sections 1 & 2

The requirement that "Facilities must be managed to promote vermicomposting" appears clumsy. A better wording might be "For vermicomposting facilities, operators must…".

Silvestri, Yakima Health District

Response: Ecology agreed. The table was revised to make it clearer. The reference to promoting vermicomposting was removed.

Comments from here to the end of the section are attributed to LeSueur, WISErg, Corp

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Comment: These comments are submitted by WISErg Corporation, in response to the Washington Department of Ecology's (DOE's) rule proposal, published in the Washington State Register on October 3, 2012, proposing to amend WAC Chapter 173-350, entitled "Solid Waste Handling Standards" (the "Rule Proposal"). We thank the Department of Ecology personnel for their careful consideration of: (1) our comments and reasoning behind them as set forth in the body of this document; (2) our suggestions for language modifications included in the mark up of WAC 173-350; and (3) our request for additional and specific actions provided at the end of this document if the DOE chooses not to incorporate our suggested language modifications.

For the reasons set forth below, we believe that certain aspects of the Rule Proposal are problematic and will serve to actually discourage innovative methods of handling and recycling organic materials – contrary to DOE's stated desire in adopting the Rule Proposal and the statutory mandate established under RCW 70.95. We also believe that certain aspects of the Rule Proposal are troublesome since they serve to perpetuate existing, yet problematic waste management methods that have demonstrable negative health and environmental impacts. We encourage DOE to carefully re-consider and revise this rulemaking, primarily with respect to innovating recycling businesses who will be negatively impacted by the added cost and regulatory burden, without commensurate benefits to public health or environmental quality.

Response: Comment noted. The Department reviews and considers all comments.

Comment: Introduction and Background

There is a nascent, but important and growing market segment of recycling companies in Washington State that are focused on developing innovative methods of reducing solid waste landfill disposal by recycling organic and other materials through resource recovery practices that produce saleable, higher-value products which can be returned to the economic mainstream without additional burdens on air and water quality, or lessening the quality of life of residential or commercial neighbors. Such technologies manage source-separated materials at the point of generation, at lower volumes, and transform the materials into products which are no longer "waste" in the traditional sense. For example, WISErg's technology is installed on-site at a customer's location, and allows the customer to convert its food scraps and other organic materials into a liquid fertilizer product which can then be sold as a retail product without nuisance odors, vermin attraction or increased health hazards. Typically, these innovative technologies are characterized by their transformation of energy or increase of biomass. These types of "zero waste" or "closed loop" technologies are consistent with the State's legislative priorities, as articulated in RCW 70.95, as they promote sustainability and they also offer the State and local municipalities a number of other economic benefits. These innovative technologies also create good, high-paying jobs for Washington residents. Indeed, in its Rule Proposal Notice, DOE explicitly" states that one of its goals in adopting the Rule Proposal is to "allow for new, innovative methods of handling organic materials, including permit exemptions." However, as currently drafted, the Rule Proposal may end up having the opposite effect. Although well intentioned, the permit exemptions created by the Proposed Rule are too narrow and restrictive and, from a practical business standpoint, will result in a number of negative, unintended consequences, as explained below.

Response: The agency proposed significant allowances for exempting small organic management systems. In part those exemptions were aimed at assisting proprietors/operators of systems such as the commenter describes. The agency looks at the impacts of rulemaking on individuals as well as facility and technology types, but has to also look at the overall outcome of a rulemaking effort and consider all perspectives.

Comment: Practical Business Effects of the Rule Proposal

In new Section 173-350-225, the Rule Proposal establishes a conditional and qualified permit exemption for "other conversion technologies" which handle up to 3,000 gallons of liquid or semi-solid waste on site, when individual tanks do not exceed 1,000 gallons in capacity. Facilities which manage less than 1,000 gallons of materials appear to have no notification and reporting requirements; however, facilities which manage more than 1,000 gallons but less than 3,000 gallons of materials must submit notification of intent and submit an annual report to the DOE.

This new permit exemption, as a conceptual matter, is a strong and welcomed support of innovation in organic recycling. However, from a practical business standpoint, as written and applied to developing commercial applications (beyond the early pilot studies) the exemption is too restrictive and will result in a number of negative business consequences for innovative recycling companies such as WISErg, perhaps even forcing these innovators with lower-risk technologies to dramatically alter their business plans or prospects for future investment and job creation. For example, by limiting individual tank size to 1,000 gallons, WISErg would need to alter its current product plan and develop a smaller sized tank unit for installation at customer facilities. This in turn, would create the need for more frequent pick-ups from customer locations, thereby not only increasing the costs of the product to the customer, but also resulting in increased carbon emissions resulting from more truck trips to and from customer locations. An immediate

business result of these transportation inefficiencies is that more remote or non-urban food waste producers would no longer be an economical customer to service. These customers therefore would not benefit from developing technologies only because of the capacity restrictions. This is already the case for traditional composting services. The lack of correlation between the proposed capacity requirements and potential for public health hazard and standard transport volumes (typically 5,000 gallons or 9,000 gallons) suggest the need for the agency to reconsider the volume limits. We would encourage the agency to align volume standards with existing policy defined by Department of Transportation standards for road weights and material category.

In addition, the 3,000 gallon total facility threshold to qualify for an exemption is too restrictive and will mean that many customer locations will have onerous and expensive permitting requirements imposed on their recycling operations. WISErg believes that if its customers are required to seek a solid waste permit, it would effectively eliminate or materially diminish customer sales. The Department of Ecology staff should imagine the effect on an "organic", "green" grocery store or a business/educational entity with commercial kitchens (i.e. Microsoft, Boeing, University of Washington) being required to register as "solid waste handling facilities". In fact, there is no major change in the standard business practice of these organizations except to immediately recycle their organic waste on site instead of storing it in increasingly expensive dumpsters for hauling to distant dump sites. These unjustified restrictions will mean that more customers will look for ways to dispose of food waste and other organic materials, such as landfill disposal, or through grinding appliances which essentially enable them to (lawfully or unlawfully) dispose of organic materials down the drain. This will increase the load on publicly owned treatment works and also increase the risk of illegal dumping or other unlawful disposal.

Response: In the final rule, the agency increased the conditional exemption in new section 225 from 1,000 gallons to 5,000 gallons. Units up to 5,000 gallons will not be required to obtain permits, notify, or submit annual reports as long as they comply with the requirements of WAC 173-350-225(2) regarding performance standards and other basic good housekeeping requirements (see the final rule for details, but note also standards for tanks, WAC 173-350-330).

The agency extended a conditional exemption from permitting to units with a capacity above 5,000 gallons up to 50,000 gallons when they notify prior to operation and meet other requirements described in Table 225(A), and the additional requirements of WAC 173-350-225(2).

The agency is constrained by requirements of WAC 173-350-330 regarding limits for above or below ground tanks. Under current solid waste rules, tanks with a capacity greater than a thousand gallons require solid waste permits. This is not an aspect of the rule the agency could address given the Governor's Executive Order that resulted in only a limited part of this rule to be amended at this time. During a future rulemaking, we will address this issue so that section 330 supports the new exemptions in Section 225. Until we are able to do that, application of the requirements under Section 330 for systems also applicable under Section 225 will be at the discretion of local jurisdictional health departments.

Comment: Even where customer sites are below the 3,000 gallon threshold, WISErg is concerned that the 1,000 gallon threshold for notification and reporting may chill customer behavior and inhibit the adoption rates for WISErg's technology and other similar conversion technologies. There is also no clear understanding of how total capacity is to be calculated for a customer who operates multiple commercial kitchens or store locations either on a contiguous piece of property such as a campus (Microsoft, Boeing, University of Washington), or multiple adjacent properties related to a single entity (e.g., a grocery store that leases an adjacent lot). If total capacity is calculated based on all deployments within a legally defined parcel or under a single entity, then

the exemption listed, regardless of proposed exemption capacities, becomes irrelevant and full permitting requirements will be required. This will become a major deterrent for new innovative business approaches.

Response: WAC 173-350-100 defines facility: "Facility" means all contiguous land (including buffers and setbacks) and structures, other appurtenances, and improvements on the land used for solid waste handling. As we understand, this is unlikely to be an issue in most potential applications. In a circumstance where the total capacity of all units installed on a large campus might exceed the facility limit for a permit exemption, the comment should consider an application for a variance.

Comment: We request that the agency consider retention time as a more effective or alternate measure of potential threat to public health or environmental quality. That is, while extended retention times are perhaps necessary and applicable to traditional composting, an alternate technology under WAC 173.350.225 that is more efficient at processing and quicker to move recycled material offsite should not be unnecessarily restricted to lower capacity requirements. A maximum retention time of 30 days for an organic waste-derived product, for example, has the intended effect of limiting over-all on-site capacity without being technology dependent or placing unequal burdens on different waste management strategies.

Additionally, we believe that a retention time requirement, in place of arbitrary capacity limits, effectively enables the DOE to achieve the intended goals of preventing adverse environmental impacts and public nuisance complaints from in-process stockpiles by assuring that the derived-product is actually commercially viable(i.e., by essentially limiting the amount of derived product that can be stockpiled on site). Retention time in WAC 173.350.225 would also harmonize with proposed wording changes proposed for implementation under composting.

Response: The department does not believe a simple retention time limit is adequately protective. A very large facility might meet a 30 day retention requirement, yet have major implications for neighbors at its location. As the commenter points out, overall this is an emerging technology. Ecology could consider alternative means of defining capacity in a future rulemaking activity, with more experience and demonstrated success with the proposed type of operation.

Comment: Thus, while we understand that DOE's motivation in creating the permit exemption in Section 173-350-225 was to help foster innovation and assist organics recycling companies such as WISErg, the practical effects of the Rule Proposal may confound this objective and create unintended and undesirable consequences. Because the volume thresholds are so low, the tank size limits are so restrictive, and the total capacity (e.g., calculation per site or entity) are unclear, very few conversion technologies will actually qualify for the exemption. Thus, there is a significant risk that the Rule Proposal will end up stifling innovation and investment in new technologies, by imposing a series of additional regulatory burdens and costs on innovative, emerging companies who are attempting to reduce dependence on landfills and create new products through recycling. This will hinder job creation in Washington. It will also have the perverse effect of entrenching the status quo; i.e., helping those larger companies who are already permitted or otherwise well capitalized and who will benefit disproportionately by the high regulatory cost burden imposed on smaller competitors. And perhaps most alarmingly, it will create additional incentives for generators of organic materials to look for other low cost methods of organics disposal, either into the public sewer systems (lawfully or unlawfully), through landfilling, or through other means of illegal dumping (particularly as the cost of composting such materials continues to rise).

Response: Ecology made significant changes to the rule that we believe will not hinder the development of conversion technologies. Individual units up to 5,000 gallons are exempt under Section 225 as long as they meet basic performance requirements of the rule. Larger facilities up to 50,000 gallons require notification and reporting, but are also permit exempt. In addition, variances are available under the existing and final rule. As noted elsewhere, Ecology was unable to revise the standards of Section 330 at this time pertaining to tanks of a thousand gallons or more.

Comment: WISErg offers the following example of how the overly-restrictive capacity limits of WAC 173.350.225 will have unintended, counter-intuitive effects. As a technology innovator, WISErg intends to offer "collection data" to its customers. Tracking what is discarded, more specifically, tracking what is discarded from which department or area of a grocery store over time, is far more likely to incentivize waste reduction than punitive or other regulatory actions could accomplish. Adequate "sample" size will make this more valuable and properly incentivizes the industry as desired by RCW 70.95. More specifically, WISErg's innovative reporting provides individual metrics and reporting to allow producers to reduce and eliminate unnecessary waste streams such as over prepared foods and aggressive produce culling. The Environmental Protection Agency estimates that 30% of food waste currently being disposed of is avoidable. WISErg's technology equips businesses with appropriate metrics to enact food reduction goals motivated by direct measurable financial outcomes. By creating regulatory barriers to customer adoption (such as the overly restrictive exemption proposed in 173-350-225), customers will be prevented from accessing these ancillary collection data benefits, because the regulatory cost of adopting the underlying technology is perceived as too high.

Response: As the agency that tracks statewide disposal, recycling, waste generation, and diversion rates, Ecology supports the collection of data that illuminates solid waste management activities on all levels. There is nothing in present or proposed rules that prohibits a business from closely tracking what it disposes. As discussed elsewhere, Ecology believes revisions to the proposed rule will remove barriers that have been of concern to the commenter.

Comment: Based on the foregoing, WISErg has proposed two alternative means of addressing these issues and fostering recycling. The first is a categorical exemption (added to 173-350-020) for certain types of conversion technologies which are generating a saleable product and while at the same time producing no residual solid waste byproduct. The second alternative is to add an additional classification of conversion technologies to the chart on 173-350-225 which would qualify for permit exemption, and which raises the threshold for notification and reporting. We have proposed actual language for such changes in the attached mark-up of the Rule Proposal.

Response: The department does not support a categorical exemption for the kinds of activities discussed here at this time. We made significant changes to the final rule to accommodate conditional exemptions to permitting for facilities up to 50,000 gallons in capacity.

Comment: We would also encourage the agency to retain the emphasis on encouraging relatively non-hazardous, non-traditional pilot projects through reduction of regulatory burdens and exemption from additional regulatory oversight from local public health agencies (beyond controlling odors and disease vectors). Given the direction of recycling technologies, maintaining broad exemptions for pilot projects serves as an important mechanism to encourage innovation and highly decentralized re-use/re-purpose models where communities and neighborhoods (in the broadest sense) could become responsible for their own, local waste output and recycling efforts.

Pilot projects and proof of concept activities require minimal elements from regulatory agencies to lower the barriers to entry. It would be helpful to maintain an exemption when capacity or retention times are minimal (for example an onsite retention time of less than 10 days), which requires only a Notice of Intent to Operate before operations may proceed, contains minimal reporting requirements which may be no more than notice to local public health and fire/rescue agencies, and finally, a certain timetable within which DOE (or other applicable regulatory bodies) will determine whether or how the activity will be regulated.

Response: There is no provision in statute or rule that explicitly allows for pilot projects. The local jurisdictional health department should be the first point of contact for any proposed solid waste management activity that may require a permit.

Comment: Policy Considerations

Statutory authority for WAC 173-350 is derived from RCW 70.95 entitled Solid Waste Management-Reduction and Recycling. Without any pejorative reading or cherry picking of the content of RCW 70.95 findings and priorities, the Washington legislature meant to set policies that would reduce the "blight of solid wastes" through strategies primarily meant to encourage reduction and recycling.

At enactment, the legislature found (see RCW 70.95.10. Legislative finding-priorities-goals): (1) "ever mounting problems involving disposal of garbage, refuse and solid waste materials resulting from domestic, agricultural, and industrial activities; (2) that "traditional methods of disposing of solid wastes in this State are no longer adequate to meet the increasing problem" and that "solid wastes pollute our land, air and water resources, blight our countryside, adversely affect land values and damage the overall quality of our environment;" (3) "waste reduction must become a fundamental strategy of solid-waste management;" (4) "source separation of waste must become a fundamental strategy of solid waste management;" and (5) that "steps should be taken to make recycling at least as affordable as and convenient to the ratepayer as mixed waste disposal".

A fair reading of the legislative priorities and goals should also note that the legislature prioritized the entire set of solid waste management goals in Chapter 70.95 and the legislature included strategies like collecting data, training of operators of landfills and incinerators well below the priorities of reducing waste and incentivizing recycling. We are specifically requesting, and have provided examples, for the Department of Ecology to more carefully balance the need to protect public health with the clearly stated demand from the legislature for the regulation to incentivize recycling and resource recovery from emerging technologies, rather than restrict them through regulatory burden.

Response: Ecology believes it made appropriate changes so that the final rule will not hinder business development, and at the same time remains protective of public health and the environment.

Comment: As new technologies emerge which have the ability to recycle, convert or transform waste materials into saleable products, keeping them in or returning them to the economic mainstream, the legislature needs to re-examine the definition of the term "solid waste" to better incentivize technologies which view materials that formerly were considered solid waste, now as feedstock or resource for new and useful products. This is consistent with the legislature's goals in adopting Chapter 70.95. Continuing to manage these materials as "solid waste" will create economic and regulatory barriers that will chill innovation and stifle attempts to increase landfill

diversion. All residents and taxpayers of Washington state would agree that these regulatory barriers are contrary to the Legislative intent of RCW 70.95

Response: Ecology acknowledges that the commenter wishes the Legislature to reexamine the definition of the term solid waste.

Comment: While we understand that in adopting the Rule Proposal, the Department of Ecology was not tasked with creating a new definition for the term "solid waste," it is also important that DOE's more limited rulemaking does not create undue barriers or burdens upon the adoption of new conversion technologies focused on organic material recovery and recycling. Particularly where such technologies pose little public health risk and yield no solid waste residual.

Response: The underlying definition of solid waste is derived from statute in Chapter 70.95 RCW. There is a complex relationship between many definitions in statute and rule, and even crossing agency jurisdictions, that are critical to solid waste management. The agency believes it took significant steps to avoid creating undue barriers to emerging conversion technology.

Comment: We appreciate the complexity of regulating a process when defined terms are not concurrently updated – both points raised and discussed during the recent public hearings in Bellevue and Yakima. The lack of definition for "solid waste" and a clear definition for when a product mined or derived from "solid waste" should no longer be managed under solid waste handling procedures appear to be basis enough for DOE to consider additional time before adopting new regulations, especially for the areas outlined in the proposed 173-350-225, until the defining terms and definition of "solid waste" have been reviewed for consideration of inclusive industries, public feedback from all affected industries and regulatory agencies(Department of Commerce or the Department of Agriculture), and emergency response agencies and up-dated language is proposed that is more in line with the objectives of RCW 70-95.

Response: There is no lack of a definition for the term solid waste. The dilemma is in the evolution of waste management. Small facilities engaged in solid waste management would likely require a solid waste permit without thus rule amendment, depending on the nature of the operation. The effect of this rule amendment is to create relief from permitting for some existing and potentially innovative waste management technologies.

Comment: In absence of taking additional time for this consideration to clarify and update the "solid waste" definition, we believe that the additional exemptions proposed by WISErg are consistent with the legislative objectives of Chapter 70.95, and will serve as a more effective regulatory "placeholder" during this interim period before the legislature adopts a more refined regulatory framework for this so-called "waste to products" industry. The exemptions proposed by WISErg will allow recycling companies to continue to innovate and attract investment (and create jobs), while still setting limits and boundaries that ensure the protection of public health and the environment.

Response: Ecology took steps to create exemptions, although not precisely those proposed by the commenter.

Comment: Additional Industries May be Negatively Affected by the Rule Proposal

The Rule Proposal appears to equate liquid waste with other solid waste, and sets narrow limits for permit exemptions, thereby arguably adding a new layer of regulation to a host of companies and industries which, heretofore, have not been regulated as solid waste under WAC 173-350. This list

of companies includes those innovators working to recover organic materials in a derived liquid form or as a liquid product (such as WISErg), but would also theoretically include a number of existing food and beverage companies, fertilizer, soap, tofu, soy fermentation, and other similar enterprises which manage organic based materials and produce or generate liquid waste. The new regulations would impose new permitting and reporting requirements on such businesses, despite the fact that the liquid materials handled by these businesses may already be exempted by or otherwise regulated under other statutory authorities such as the Clean Water Act.

Response: The department does not have enough specific information to respond to the above comment.

Comment: From a scientific standpoint, the definition of "liquid" proposed in the amended WAC 173-350 is overly broad and elastic and is likely to include industrial processes not intended to be regulated under Solid Waste. For example, even fully open vessels containing denser than air gases (such the machine-generated "fog" from the latest Lady Gaga concert or nitrogen gas used to overlay oxygen sensitive compounds) would fit the proposed definition of liquid. The proposed definition of "liquid" also fits such obviously "solid" commercial products such as pepper corns, quinoa, sorghum seed, latex solids, slaughter-house offal, cellulose and gypsum-based wall board mud, as well as, drilling mud or clay. The easily elastic, and non-exclusive, definition of "liquid" suggests the DOE, in fact, wishes to regulate as solid waste, materials in all forms, whether gas, liquid, or solid. This creates the potential for confusion and overlapping regulatory regimes, including requirements imposed by the Clean Air Act and the Clean Water Act. It also means that a number of industries and businesses which have heretofore not been regulated under WAC 173-350, may now be brought under its umbrella, if they are using organic materials as a feedstock for their commercial products.

Response: The definitions of "liquid" and "liquid waste" were already in the rule and no changes were proposed to them. Ecology does not interpret peppercorns as either a waste (unless they are in fact being disposed) or a liquid, and does not seek to regulate gasses released at concerts. The agency does, however, regulate wastes that are applied to the land –such as food processing sludges, and biosolids, which may be very liquid in nature (but are also capable of being dewatered), and restricts the disposal of liquid wastes and wastes containing free liquids in landfills.

Comment: New Categories for Exemption and Increased Exemption Thresholds

As described above, we believe that the exemption categories and thresholds established by DOE under 173-350-225 are not adequately crafted to address many of the recycling-focused businesses that may be handling organic materials for purposes of resource recovery. We believe the currently proposed categories and thresholds reach too far downstream to small quantity recyclers and, most significantly, potentially even generators themselves, and will thus impose a substantial new regulatory and permitting burden on recycling companies, thereby stifling innovation and promoting landfill disposal or more traditional composting. The cost (in terms of dollars, time, and human resources) in obtaining a permit for organics recycling companies will be crushing.

Response: The proposed rule does not obligate solid waste facilities to more permitting than is currently the case. The agency also significantly expanded allowances for permit exemptions in the final rule.

Comment: As such, we have proposed two new alternative exemptions to address this important and nascent business sector. First, we have proposed a categorical exemption be added to 173-

350-020 which provides that the chapter does not apply to conversion technologies or appliances that are used or installed at the customer/generator site for the purposes of producing a saleable product from source separated organic materials and which generate no solid waste residual. Such technologies meeting the above description are not managing a solid waste, but mining useful and re-usable materials for purposes of creating a new, saleable commercial product. As such, they should be outside the scope of the solid waste handling regulations in 173-350. To the extent they pose water quality or public health issues, they would still be regulated under other statutes and authorities, including the local public health department.

Response: The agency did not accept this proposal, but expanded the conditional exemptions found in WAC 173-350-225.

Comment: Secondly, as an alternative, we have proposed adding another, more specific classification to the table in Section 173-350-225, which would create a conditional permit exemption for unlimited volumes generated by conversion technologies or appliances that are used or installed at the customer/generator site for the purposes of producing a saleable product from source separated organic materials and which generate no solid waste residual. To qualify for this exemption, the user would need to meet the following conditions: a) the derived product materials may not remain on site for more than thirty days; and b) the conversion technology and derived product materials do not pose a risk of, i) nuisance odors beyond the boundary of the property, ii) a risk of gas releases or explosion fueled by gases produced by anaerobic microbes, or iii) a risk of waste discharges from abandoned or improperly managed facilities and iv) the processing tank is continuously monitored for pH, aeration and vessel leakage. These conditions and limitations on the permit exemption help address the primary health and safety issues identified as concern to DOE. In addition, for larger volume generators who are handling more than 10,000 gallons of material on-site per a single commercial operation, the DOE would be provided with advance notification, annual reporting, and certain other conditions would apply.

Response: This approach is closer to the one Ecology adopted (discussed earlier). We are not supportive of exempting "unlimited volumes."

Comment: These exemption categories and thresholds are much more realistic and sensible for organics conversion and recycling companies, and would serve to protect public health, while also fostering innovation by imposing a reasonable and rational regulatory framework that balances the cost of compliance with the environmental risks associated with these product-generating technologies. From a scientific and human health standpoint, many conversion technologies such as WISErg's technology, pose little risk to health and safety or environmental exposure. For example, WISErg's technology, which employs an open-vessel, oxidative (i.e., non-fermentative) process, does not produce nuisance odors and does not produce hazardous or explosive gases like hydrogen, hydrogen sulfide or methane, in the ordinary course of business.

Response: Ecology believes the actions it has taken in revising the proposed rule demonstrate willingness to work with stakeholders.

Comment: Moreover, to the extent these new exemption categories contradict other existing requirements with respect to tank regulations (e.g., 173-350-330), then DOE should make clear that these exemptions also would apply to any permitting requirements that may be applicable under any such tank regulations. Based on the limited risks to human health and the environment (and the conditions and qualifications already imposed on the permit exemption as described above), such a clarification is justified.

Response: Because of constraints in the rule revision process, Ecology was unable to address the tank standards in 330 of the rule. Until the agency is able to do that, implementation of Section 330 remains in the hands of local jurisdictional health departments.

Comment: The new thresholds for notification and reporting, we believe, are more consistent with business realities, result in more harmonious alignment with existing WAC definitions and transportation rules and will impose much less of an economic burden on the adoption of new conversion technologies. The current Rule Proposal, as drafted, could deter a significant number of customers from adopting organics recycling and recovery technologies, as the burden of notification, tracking and annual reporting is not part of their core business and is not an obligation they may be willing to undertake. From the customer's perspective, it may simply be easier for them to grind up organic material and dispose of it down the drain, or simply place it into a container for landfill disposal. We recognize that changing cultural behavior is critical and approaches that provide financial incentives, through cost reduction, will accelerate behavior change more rapidly than regulation with deterrents that prevent the end user from willingly participating because of the increased cost and complexity.

Response: Ecology believes revisions to the proposed rule are responsive to the commenter's concerns.

Comment: Specific Recommendations:

Proposed alternative language

Response: Ecology has responded to comments.

Comment: We have included a marked-up version of the WAC 173-350 Rule Proposal with our proposed alternative language for the additional exemptions, as described above. Please see the mark up attachment.

Response: The agency reviewed the marked up version, which is a matter of record. Our responses are above and below here, and otherwise reflected in the changes to the proposed rule.

Comment: Other specific recommended actions:

In the event that DOE does not adopt the alternative language proposed in the mark-up material provided, then we propose that the DOE consider and adopt the following specific recommended actions and/or changes prior to issuing the Proposed Rules:

Response: The agency believes changes to the proposed rule are responsive to the commenter's concerns, while not extending the complete exemption the commenter might have wished for. We cannot, however, know with certainty and so we are compelled to answer the comments below as well. Agency Note: Comments are numbered below as they were in the submittal.

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1. **Comment:** DOE should defer implementation and seek further legislative guidance and statutory authority prior to the extension of solid waste regulations to processes that are predominately liquid in nature or that produce liquids as the primary product but utilize solid components in the liquid development process (including fertilizer, soap, beverage; tofu; soy fermentation and similar businesses).

Response: Ecology did not delay rulemaking on this basis, and has adopted a final rule.

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2. **Comment:** DOE should postpone implementation of the amendatory changes to WAC 173-350 and reassess their notification strategies so likely impacted businesses or industries (e.g., beverage industry including breweries, wineries and distilleries among others) can be properly notified and heard so that beneficial and negative impacts of amendments to WAC 173-350 can be adequately assessed by DOE.

Response. Ecology followed proper procedures for notifying potentially interested parties, which involved outreach through different means at different times of the process to several thousand individuals, businesses, and media outlets.

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3. **Comment:** DOE should postpone implementation of the amendatory changes to WAC 173-350 to address inconsistencies on exemption policy across each of the major sections (200 and 250) accounting for small business impact and new innovation technologies entering the market. As a small business we have focused our efforts in providing feedback on WAC 173-350-225 but see similar issues which will deter innovation in use of in-vessel composting technologies (appliance like) and small scale liquid anaerobic digesters which we see a necessary option for in handling high solids waste streams such as yard wastes at a community level.

Response: Ecology responded to comments received.

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4. **Comment:** DOE should postpone implementation of the amendatory changes to WAC 173-350-225 to allow for additional feedback consideration and public input given this section was only recently introduced and has not been had the benefit of public scrutiny to fully understand the broader implications on small businesses, regional economic impact, and environmental considerations.

Response: Ecology created section 225 from portions of 220 and 250. The rulemaking process from the beginning addressed various aspects of solid waste handling such as vermiculture and anaerobic digestion. Only facility types addressed in statute or rule were already conditionally exempt from solid waste handling, therefore we created a new category for small scale and other conversion technologies so that these facilities would not be required to obtain a solid waste handling permit when similar sized composting or anaerobic digestion facilities had an exemption. Without adding this category, any such small businesses would have the economic burden of permitting; therefore, Ecology did consider these economic impacts and took action to limit those burdens.

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5. **Comment:** DOE should postpone implementation of the amendatory changes to WAC 173-350 until all affected local public health and fire/rescue agencies have been notified and had to a chance to comment on the expansion of their respective obligations resulting from the amended WAC.

Response: Ecology has conferred with local jurisdictional health departments during the rule development process. Fire and rescue agencies and all others are welcome to comment or join our ListServs the same as any other potentially interested party. Ecology disagrees that fire/rescue agencies have expanded obligations as a result of this rule proposal

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6. **Comment:** DOE should postpone implementation of the "liquid" associated amendments in WAC 173-350 until the Department adequately assesses whether the proposed changes (1) actually favor established business activities such as traditional land-based composting

(through, for example, increased barriers to entry; arbitrary limits on capacities, etc.); (2) will encourage generators to increase reliance (lawfully or unlawfully) on disposal of solid materials into public sewer drains and publicly owned treatment works; and (3) actually hinder the development of innovative methods of recycling. DOE should be mindful that the legislative authority for WAC 173-350 arises from RCW 70.95 which was adopted by the legislature intentionally to increase innovation in recycling. A complete range of recycling strategies that meet the needs of modern society have not yet been developed, and more not less, innovation is important to encourage adequate recycling technologies.

Response: Ecology is always interested in innovative technologies. Although we look at economic impacts, the department does not determine whether a change favors one business element over another. The agency's actions relieve certain parties of the solid waste permitting burden. A change in reliance on means of disposal into public sewerage systems cannot be attributed to the agency taking no action, since the system will not change.

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7. **Comment:** DOE should redefine "liquid" in the amendatory section to more reasonably harmonize with other definitions of "liquid" found commonly in federal law and explicitly defined elsewhere in the RCW and WAC and nearby municipal codes. For example, the Seattle Municipal Code specifically exempts liquids for the solid waste language when the product includes source-separated, recyclable materials.

Response: Ecology will likely consider how it evaluates the relationship between liquid and solids in wastes at some future date under another rulemaking process.

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8. **Comment:** DOE should explicitly exempt recycling processes that that encounter only minimal to negligible traditional solid waste in WAC 173-350.

Response: The agency included a range of exemptions for small solid waste management activities in the proposed and final rule. The commenter may have a list of traditional versus non-traditional solid wastes in mind, and a concept of negligible. The agency cannot speculate, but notes this is the type of evaluation that might accompany reconsideration of the fundamental definition of solid waste.

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9. **Comment:** DOE should explicitly exempt open-vessel, oxidative (non-fermentative) industrial processes with minimal to negligible sortable, solid-waste contaminants that result in liquid saleable products from the WAC 173-350. In the usual course of business, open-vessel, oxidative processes do not produce nuisance odors, do not produce hazardous or explosive gases like hydrogen, hydrogen sulfide or methane.

Response: See response to comment 15 in this section.

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10. **Comment:** DOE should explicitly exempt open-vessel, oxidative (non-fermentative) industrial process with negligible to minimal, sortable solid waste contaminants that result in predominately liquid or dried-liquid, saleable products that are registered with the WSDA as fertilizers.

Response: See response to comment 15 in this section.

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11. **Comment:** In the amended WAC, DOE should increase the capacity/volume of "other conversion technologies" and processes, both on and off site, to levels with better balance between public health concerns (which appear minimal) and economic development.

Response: In fact, Ecology increased the allowable volumes for exempt facilities significantly, in part to improve the balance between potential health or environmental impacts and business development.

Comment (Unnumbered): As with the slaughter industry, WAC 173-350 should specifically prohibit the commercial or industrial disposal of solid, vegetative and meat scraps by grocery stores, restaurants and cafeterias, butcher stores through dumping of otherwise untreated, ground or pulped waste into the public sewer system.

Response: Disposal of this material to the public sewer system is regulated by local ordinance. In permits Ecology issues to municipal governments that own and operate sewage treatment plants, we prohibit them from authorizing or knowingly allowing the introduction of certain classes of pollutants to the public sewer system. Prohibitions include solid or viscous pollutants in amounts that could cause obstruction to the flow in sewers or otherwise interfere with the operation of the POTW, and any pollutant, including oxygen-demanding pollutants, (BODs, etc.) released in a discharge at a flow rate and/or pollutant concentration that will cause interference with the POTW.

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12. **Comment:** Reduce the regulatory burden of the amended WAC by restricting reporting requirements for exempt facilities under WAC 173-350-225(A)(3) to identification of principal processing sites, tick-box categorization of production volume, identification of local public health agency, and identification of the responsible local fire/rescue agency without requiring permits, reports, or other documentation from customers.

Response: The reporting requirements for conditionally exempt facilities are minimal and necessary for demonstrating compliance with the limits set under the terms and conditions of the exemption. The reporting helps Ecology and the State of Washington track efforts to reduce waste and increase reuse and recycling. Ecology has not received significant comments regarding the reporting requirements for exempt facilities from other stakeholders and believes the benefits incurred by this requirement far outweigh the minimal burden to operators. Both the notification form and the annual report form can be filled out in a short amount of time, as much of the information is already in the form of tick-boxes or fill-in-the-number boxes.

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13. **Comment:** Reduce the regulatory burden of the amended WAC by providing an exemption for permitting to recycling processes that that encounter only minimal to negligible traditional solid waste as contaminants to the recycling process.

Response: Ecology provides many exemptions from solid waste permitting for recycling, composting, storage of inert or wood waste in piles, materials recovery, anaerobic digestion, beneficial use, and now, 'other forms of organic solid waste handling'. In addition, this rule revision expanded exemption opportunities. Ecology does not know how to interpret "traditional solid waste" as all recyclable materials are considered a subset of solid waste under chapter 70.95 RCW. In fact, the original definition of garbage, which many people now equate with all solid waste, was specifically kitchen waste and animal parts not used in cooking. What is considered a contaminant for one recycling process – food waste in paper fiber recycling – is considered a feedstock for another – food waste in anaerobic digestion.

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14. **Comment:** Reduce the regulatory burden of the amended WAC by providing an exemption for permitting open-vessel, oxidative (non-fermentative) industrial processes that result in liquid, saleable products with low-level solid-waste contaminants or where such "contaminants" become included by design in the liquid product.

Response: See response to comment 15.

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15. **Comment:** Reduce the regulatory burden of the amended WAC by providing an exemption for permitting to open-vessel, oxidative (non-fermentative) industrial processes with negligible to minimal solid-waste contaminants that result in predominately liquid or dried-liquid, saleable products that are registered with the WSDA as fertilizers.

Response: Comments 9, 10, 14, and 15 seek exemptions for a particular type of technology operating under slightly different circumstances. Ecology has provided significant exemptions under the new Section 225. The agency placed what it believes to be appropriate limits and conditions on those exemptions.

Ecology has experience with specific treatment technologies based on implementation of the state biosolids program. There are many manufacturers producing different kinds of units that treat sewage sludge to meet standards so it can be classified as biosolids. Biosolids as a final product are suitable for application to the land, sometimes with further restrictions. Although we can identify many successful technologies, vendors, and manufacturers, even the best continue to be subject to permitting with obligations to document operating criteria at this time.

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16. **Comment:** Reduce the regulatory burden of the amended WAC by reducing the notice and reporting requirements for recycling processes when that industry only encounters only minimal to negligible solid waste that is not incorporated into the recycled product.

Response: As explained above, the reporting requirements for conditionally exempt facilities are minimal and are necessary for demonstrating compliance with the limits sent under the terms and conditions of the exemption and helps track efforts to reduce waste and increase reuse and recycling.

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17. **Comment:** Reduce the regulatory burden of the amended WAC by reducing the notice and reporting requirements for open-vessel, oxidative (non-fermentative) industrial processes with negligible to minimal solid-waste contaminants that result in liquid saleable products. Since justification for the amendatory extension to liquids is not provided in RCW 70.95, the DOE should be required through amendments in WAC 173-350 to identify the specific public nuisance or hazards the agency intends to avert so as to align the intended benefits with the specific regulatory requirements.

Response: : As explained above, the reporting requirements for conditionally exempt facilities are minimal and are necessary for demonstrating compliance with the limits sent under the terms and conditions of the exemption and helps track efforts to reduce waste and increase reuse and recycling.

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18. **Comment:** The DOE should be required in amendments to WAC 173-350 to estimate the cost and time of preparation of notices, permits and reporting requirements for businesses / industries required to comply with proposed amendatory changes in the WAC. We believe the analysis of cost impacts of the Rule Proposal published by DOE dramatically underestimates the actual and potential impact of the new rules, due in part to the fact the proposed permit exemptions for other conversion technologies is so narrow and restrictive.

Response: The Cost Benefit Analysis has been revised. Facilities operating under permit exemptions in accordance with Section 225 at the lowest threshold do not have costs associated with permits or notification. Facilities operating in tier 4 of the Table 225-A have minimal requirements for notification, reporting and testing. Without the benefit of the permit exemptions provided in Section 225, these facilities would be subject to all of the solid waste permit requirements. The rule therefore represents a reduction in economic burden from the baseline.

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19. **Comment:** The DOE should be required in amendments to WAC 173-350 to notify each local public health agency and fire/rescue agency of the potential effects on the respective agency of the expansion of the amended WAC 173-350.

Response: Ecology kept local health departments informed during the rulemaking process. Health departments set their own fees in accordance with local ordinances. Local fire/rescue agencies are welcome to comment on agency rules. Ecology does not see an impact in this case, and no such agencies commented. We expect, however, that if there is an impact it will exist whether there is a solid waste permit in effect or not.

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20. **Comment:** The DOE should be required to fund the estimated costs on local public health and fire/rescue agencies due to expansion of obligations from the amended WAC. The DOE should be required in amendments to WAC 173-350 to share data obtained from notices, permits and reporting with affected local agencies including local public health agencies and fire/rescue agencies in order to ensure that the perceived public benefits of such notices, permits, and reports are actually accrued.

Response: Ecology evaluated the economic impacts of the rule as required by law. Ecology shares information it has on record in accordance with public disclosure laws.

Anaerobic Digestion

Ecology responds to comments on Anaerobic Digestion individually below.

Comment: DOE should move ahead with the rulemaking that pertains to anaerobic digestion.

WRRA believes that the sections dealing with anaerobic digestion meet the criteria for exemption to the Governor's Executive Order on Rulemaking.

WRRA Members have not raised specific concerns with the proposal language dealing with anaerobic digestion. WRRA believes that rules for these facilities should be strengthened and not weakened, exemptions from current solid waste handling rules be kept to a minimum and that any adopted amendments protect environmental and human health that is likewise provided for throughout WAC 173-350.

Lovaas, Washington Refuse and Recycling Association

Response: Comment noted.

Comment: Page 42, Table 250 A, column 2

This states "3,000 gallons of liquid or semisolid organic feedstocks on-site at any one time, when individual tanks have a capacity of # 1,000 gallons, or 20 cubic yards of nonliquid organic feedstocks onsite at any one time."

We find this is confusing. A less confusing wording might be:

- 3,000 gallons of liquid or semisolid organic feedstocks on-site at any one time,

or

- when individual tanks have a capacity of equal to or less than# 1,000 gallons, or 20 cubic yards of nonliquid organic feedstocks onsite at any one time.

Silvestri, Yakima Health District

Response: The table was revised and the criteria for exemptions were expanded. We believe the criteria for limits on capacity are now clearer.

Comment: WAC 173-350-250 Anaerobic digesters. The association suggests that language be added to this section that provides local health jurisdictions with the ability to permit these as solid waste facilities if they as the local health official, do not agree in writing that a biosolids permit or biosolids management plan issued by the Department of Ecology is adequate to be protective of human health and the environment. The association believes that suggestive language that was used in WAC 173-350-220 (a) (v) (A- C) is appropriate under the anaerobic digesters section as well.

Stenson, Washington State Environmental Health Directors

Response: Ecology removed the language regarding reciprocity for biosolids compost facilities. See the discussion in **Conflict with Biosolids Rules**. The 2009 Legislature exempted anaerobic digesters associated with dairy farms from solid waste permitting. Ecology cannot override state law with rulemaking (see RCW 70.95.330). Other solid waste digesters that do not qualify for the exemption may be subject to solid waste permitting unless they are excluded under Section 250. It is possible that federal law would compel a digester to be permitted under water quality or biosolids laws. As the rule is written, the language says that the solid waste permit requirements do not apply if an anaerobic digester is permitted under Chapter 173-308 WAC. If there is such a proposal, Ecology and the jurisdictional health department should work together to determine the appropriate permit conditions and best permit vehicle.

Comment: Page 40, comment in Table 250-A in 3rd column under (e)

(e) If imported organic feedstock contains bovine processing waste, it must be derived from animals approved by the United States Department of Agriculture Food Safety and Inspection Service and not contain any specified risk material, defined as: Skull, brain, trigeminal ganglia (nerves attached to brain and close to the skull exterior), eyes, spinal cord, distal ileum (a part of the small intestine), and the dorsal root ganglia (nerves attached to the spinal cord and close to the vertebral column) of cattle aged 30 months or older;

This will be extremely difficult to monitor and regulate. Suggest removal of bovine processing wastes.

Pon, Public Health - Seattle & King County

Response: Ecology understands the concerns surrounding monitoring of specified risk material. Per RCW 70.95.306 this waste may only be derived from animals approved by the United States Department of Agriculture Food Safety and Inspection Service at USDA or FDA approved facilities. These facilities must by law remove and isolate SRM.

Comment: The issue of concern is the ability for an existing or new anaerobic digester, operating under the conditions expressed within Substitute Senate Bill 5797 and resultant RCW 70.95.330, to obtain a permit to operate from the local Health Department, (if they choose to do so), without being subject to regulation or design requirement in excess of that / those specified within the statute.

With the passage of SHB 5727 the Washington State legislators set certain standards for new and existing anaerobic digesters to be exempt from the requirement to obtain a solid waste handling permit. Among those is the requirement to meet design and operating standards of **NRCS** code 366 in effect at the time of adoption. According to my file, this is believed to be the September 2003 version for code 366. Additionally, storage structures is/are to comply with the NRCS code 313 effective as of the date of adoption (believed to be December 2004) <u>or</u> "certified to be effective by a representative of the natural resources conservation service" or meet applicable construction industry standards...

Following what I believe to be the pathway for permitting for existing or new exempt facilities, the newly proposed section WAC 1473-350-250(4)(E)(iii)(A) uses a NRCS Code 366 effective October 2010 or other effective date specification for digester design criteria. (iii)B requires surface impoundments and tank design standards to meet WAC 173-350-330(3) or other design approved by the health department and the department (not NRCS review and approval).

Ponds, section (vii)(A), requires the use of Technical Guide 313 revised June 2011 or a described specified liner criteria. Subsection (C) of this section allows for the Jurisdictional Health Department to approve alternative design. However the proposed design must be demonstrated to function "at least as effectively" as the most current NRCS design criteria noted above.

From a practical standpoint, and potentially a technical standpoint as well, it is likely not feasible to demonstrate equal effectiveness / protection assurances for structures built under previous standards when compared with new design standards. Therefore, a reasonable pathway to permitting does not appear to exist.

I request that the proposed rules be revised to allow for otherwise exempt facilities seeking to obtain a permit to meet NRCS standards applicable at the time of SHB 5797 adoption or the review and approval process discussed within 5797.

Following this same line of discussion, applicable date of design standards identified within Table 250-A for Terms and Conditions for Exemption should be addressed accordingly.

Bader, Environmental Health Services

Also, when considering the permitting pathway for otherwise exempt digesters, please consider if the requirements specified within WAC 173-350-030, Effective dates are applicable and if they might come into play.

Bader, Environmental Health Services

Response: RCW 70.95.330 provides an exemption for qualified anaerobic digesters from solid waste permitting, and Ecology has included that exemption in the new rule. Ecology is also

charged with setting standards for permitted facilities. Standards for exempt facilities are generally less specific and less restrictive than for permitted facilities.

The new rule provides a pathway for permitting of anaerobic digesters, including dairy digesters currently under exemption who wish to expand feedstocks beyond what is allowed under the exemption. The standards for surface impoundments at permitted digesters specify that they must be designed to meet the same standards for all other solid waste facilities under WAC 173-350-330, that they meet the current NRCS standard, or that they demonstrate to the jurisdictional health department that the surface impoundment they provide offers an equal level of protection.

If an existing exempt digester cannot meet the aforementioned standards, they have the option of remaining under exemption.

Economics

There were many comments on the cost of the amended regulations. We heard that twenty five percent of composters have gone out of business in the past five years, that this is a challenging time - maybe not the best time to adopt new rules. We heard that it takes time and money for a regulated entity to participate in the rule process, and that while they bear the burden of the costs, they get none of the benefits. We also heard a strong desire to allow the marketplace to be the arbiter of compost quality.

On the opposing side of the argument, we heard from community leaders and citizens who feel that state and local governments have not done enough, and that rules do not go far enough to correct problems affecting them. Off-site odor impacts to residents and businesses were the largest concern. There was frustration that a lack of cooperation was driving matters to litigation, which would only cost communities and citizens more money. We have also heard the frustrations of the State Department of Transportation and customers who are unhappy with the amount of trash in the compost products they receive.

In reviewing comments, Ecology could place them generally in one of five categories:

The Cost of Plans. Commenters stated that the rule requires a multitude of additional plans that will be costly and redundant, the Progressive Odor Management Plan will be an expansive valueless exercise, construction quality assurance plans are not warranted, plans need to be written by a professional engineer (and will therefore be more costly), and that facilities will have to hire more staff to deal with shortened timeframes for compliance.

Costs Associated with Storage of Finished Product. Commenters were concerned with additional facility management costs for areas where final product is stored (particularly stormwater and leachate control), and the implications for marketing a solid waste as opposed to a product.

New Standards for Physical Contaminants. Commenters remarked that the range of contaminants was increased without increasing the threshold, the standard for film plastic is too low or unnecessary, screening will cost the industry millions, the standards are not supported by science, there will be a cost for implementing sort lines, industry is already working to resolve these problems, and questions remain about disposition of materials that fail the standard.

Local Costs. A local health department asked about recovering costs for engineering review (and a commenter remarked about the cost of reimbursing the regulatory agency for the cost of review). Community leaders in areas where citizens feel they have experienced off-site

odor impacts remarked about the cost to businesses and impacts to property values. Local government representatives raised concerns about cost impacts and impacts to their recycling rates.

Criticisms of the Economic Method. Commenters noted inadequacies in the model, errors in the mathematics, inappropriate pay scales – a professional engineer should be the standard, failure to account for overhead costs, failure to account for the cost of regulatory review, up-stream costs ignored, assumptions about the size of businesses, and belief that benefits will not be realized. The largest point of contention was that the agency underestimated the cost of managing physical contaminants under the rule, including sorting, turning away loads, landfilling product, and screening.

General Comments on the Economics. A few comments expressed an opinion about some economic aspect of the rule that did not fit into one of the above categories.

In this section Ecology included comments that had an economic aspect as a significant focus. The comments are grouped below in the categories identified above, and may appear in more than one category.

General Comments on the Economics

Comments in this section were identified as having an economic aspect, but were not assigned to one of the more specific categories discussed above. ***Ecology responds individually to comments in this section.***

Comment: We have reviewed the proposed rule changes, the Preliminary Cost-Benefit and Least Burdensome Alternative Analyses, and the Small Business Economic Impact Statement. The detrimental effects to the industry due to the proposed changes are not adequately addressed. Five years ago, in 2007, there were 41 permitted composting facilities in the state and there are now 33 reported. We are aware of small governmental (city and county) operated facilities, that received grant money from the Department of Ecology, are auctioning off their inventories and further degrading the markets. At a time of poor economic conditions, and a weakened industry, now is not the time to insert new regulatory mandates into areas that should be left to market forces.

Schutt, Royal Organic Products

Response: See Lovaas below.

Comment: DOE should reconsider its economic impact statement and the cost benefit analysis.

The cost to generators, collection companies, composters and the consumer and the benefits should be reexamined in light of the comments it has received from industry members throughout the development of this proposal. Over the last 5 years, over 25% of the compost facilities have closed and we believe that the proposed regulations could lead to even more closures upon implementation, which would defeat the very purpose of these amendments.

These costs far exceed those reflected in the current cost benefit analysis which covers the proposed changes.

Lovaas, Washington Refuse and Recycling Association

Response: Costs are accounted qualitatively as well as quantitatively. We believe off site impacts and product quality problems are jeopardizing a healthy future for organics management. That

being said, the past five years are nearly unprecedented in United States economic history. We believe commenters have made some assumptions (which we have clarified) regarding implementation of the new rule that are not consistent with Ecology's expectations (for example required leachate collection in areas where finished compost is stored). We also made significant concessions in the final rule to try to reduce impacts while not conceding what the agency believes are important environmental elements.

Comment: I ask that Ecology re-revise the proposed WAC 173-350-220 regulation. As currently written, this regulation is likely to reduce recycling capacity for organic wastes in Washington as well as eliminate numerous small businesses. The overwhelming number of revisions in this regulation are not science based health and safety oriented and will have serious negative implications and high costs for the composting industry and small business associated with that industry. After such a re-revision and a realistic analysis of the costs and potential benefits of the revision, another round of public comment should be taken to ensure additional unintended consequences are not invoked.

Thomas, Terre-Source

Response: Ecology did not determine that costs of the final adopted rule would be so prohibitive to ongoing business as to cause facilities to cease operation. Ecology made several key adjustments in response to stakeholder comments that should help to reduce costs. Ecology also clarified stakeholder misunderstandings which were at least partly responsible for concerns about escalated costs.

Comment: The shortened timelines required to comply with the provisions of the proposed amendments appear to be unnecessarily onerous and could result in increased collection and processing costs passed on to customers in the form of higher tipping fees as the owners of composting facilities hire additional staff or reassign existing staff to comply with the expedited compliance requirements. We recommend that the Department of Ecology collaborate with composting facilities to establish a more reasonable set of timelines.

MacGillivray, City of Kirkland

Response: Ecology disagrees with the characterization that the time for compliance and reporting has been cut in half. The timeframes for response in the previous rule were based on an entirely different circumstance. Ecology has discussed the timeframe for meeting various elements of the new rule in the section on Effective Dates elsewhere in this document. Ecology believes the time provided is reasonable. We have also pointed out the potential for a variance where there are no imminent threats to health or the environment.

Comment: We expended money and time last spring reviewing, communicating and responding to that version of proposed regulation. Rather than feeling heard from that process, this version of regulation revision appears to have sprung completely anew. Different sections have been revised and different concepts and definitions incorporated. We did not ask for this regulatory revision. Although the existing WAC 173-350-220 is not perfect, it is preferable to the current revisions. Because the rest of the WAC is under a moratorium on rule revision, but this section has been pushed through, we can only wonder where the motivation originates. It appears Department of Ecology is intent upon making work for themselves to justify their existence at our expense. Our business has also been impacted by the economic conditions and we resent and can no longer afford these trivial expenditures and diversions from the work of our business.

Dressel, North Mason Fiber

Response: The costs of rulemaking – whether internal or external – are not a result of the final adopted rule. Because they are not a result of the rule, they are not accounted for in the economic analysis as a matter of practice. Ecology does understand that every time a rule is written, staekholders incur costs simply by having to be vigilant and participate in the process. Costs are currently accounted for in the economic evaluation. Changes in the rule from one phase of the process to the next are explained in supporting documentation.

Comment: In recent weeks, local processors have expressed concern to my staff regarding the proposed revisions to 173-350 WAC. In some instances, these companies believe that the proposed changes will have crippling consequences. This concerns Kitsap County greatly, as we have worked diligently over the past several years to make organics diversion a priority, consistent with the state solid and hazardous waste management plan...

...Our fear is that undue costs put on these facilities may force them out of business or increase costs to a point where our programs are unsustainable. This would put Kitsap County in a very uncomfortable position -likely discontinuing our established programs, and forcing the material we have worked so hard to divert, back to landfill disposal.

At a time when demand for finished compost is down and compost facilities are struggling to stay afloat in the current regulatory framework, it may not be the time to put more analytical testing and consultant costs on these facilities. We encourage the Department to continue working with the industry, and to come to a solution that will support the continued success of existing programs.

Campbell, Kitsap County Public Works

Response: We believe the bulk of economic impacts from the rule will result when compost facilities are contributing to environmental problems, and when compost quality is not meeting standards. Issues with compost quality have already damaged existing programs. This rule will help improve compost quality. Ecology has no desire to cause economic difficulties for small (or large) businesses.

The Cost-Benefit Analysis has been updated to a final version in response to public comments. Ecology did not determine that costs of the final adopted rule would be so prohibitive to ongoing business as to cause facility shutdown. Please see the Final Cost-Benefit Analysis for costs.

We encourage Kitsap County to work with its partner facilities, with the local health department, and with Ecology to implement the requirements of the rule in the least burdensome manner.

The Cost of Plans

There were many comments expressed about new plans required by the rule. The two primary concerns were the many new plans that would be required and the cost of preparing the plans. There were also concerns about the cost of updating existing plans. The proposed Progressive Odor Management Plan in particular was seen as both costly and a poor investment of resources because of its speculative nature.

Ecology responds following the comments below.

Comment: I understood that these updates for the rules were to improve the permitting and development of efficient compost facilities and operations, and due to the Governors order to hold

any mandated requirements, there would be a reduced and more efficient standards. There appears to be increased requirements for plans. More plans cost more to develop. This is not conducive with the intent of the Governor's order to hold mandates that increase government costs.

Harn, Chelan County Public Works

Comment: We also need to re-examine the costs of the new plans. The most costly plan identified by Ecology is the Progressive Odor Management Plan. This plan would have us guess at a future problem and guess at a future solution while incorporating nearly all aspects of production. Those kinds of decisions could lock us into a system that may not be logical in case of an actual incident, and would not be left to someone paid "prevailing wage". It would most likely require an outside engineering consultant, if existing management or engineering capabilities were not adequate. The cost of employee would be more like $30 an hour plus an additional (as it would be for any employee cost) of about 43% for taxes, benefits, and payroll overhead. These figures should be conservatively low as the Dept. of Ecology charges facilities $95/hr to review documents. This increases the cost estimate from the high published by 122% to $56,563.38. Adjusting the other numbers in Table 3 of the "Preliminary Cost-Benefit and Least Burdensome Alternative Analyses" to account for employee costs in 2012 dollars, the total costs of the rule changes is now $498,807 not including the extra screening. The total cost of the proposed rule changes, to the industry over the next 20 years, would be a minimum of $19,988,682. That number does not include other facility upgrades needed to comply with other issues regarding what is compost and what is solid waste.

Schutt, Royal Organic Products

Comment: 173-350-220 (4) Composting Facilities- Operating Standards (permit requirements): (f) pg 33 through (M)(vii) pg 34 This respective rule is proposing the creation of multiple "plans" ranging from community outreach to progressive odor management. All of our facilities currently have very complete and detailed operating plans, which are all inclusive and representative of demonstrated operational prudence, community awareness, and success. This proposal to require a multitude of additional and individual plans would be costly and redundant for our facilities. Plans start on page 33 (f) of the document and go to page 34 (M) (vii) and plans of this nature should be left fully to the discretion of the Jurisdictional Health Department which has most familiarity with specific operations and the adequacy of current operating plans.

Snyder, Waste Connections

Comment: Ecology's estimate of the cost of the Operations Plan changes of 20-hours by someone making a prevailing wage of $16.86 - $19.30 is so far off it is insulting. The changes required to an existing Operations Plan in this revised regulation, at a minimum, include:

- Calculation and description of "Maximum Capacity"
- Calculation and description of "Throughput"
- Description of how to "prevent the migration of agricultural pests"
- Procedure to reduce physical contaminants in composted materials to meet testing parameters in Table 220B
- Change in analytical parameters and frequency at which the compost must be sampled

- List of feedstocks with general description of the source (removing reference to Type
- I, II, III and VI feedstocks)
- Revision of the Leachate Management plan to accommodate leachate collection on
- Finished Compost Plans
- Description of how facility staff will receive appropriate training…
- ODOR PLANS: Plan to control air contaminants; Plan to document odor complaints, Progressive Odor Management Plan; Nuisance Odor Prevention and control elements of facility maintenance activities; Description of how feedstocks with high moisture or potential for high odors will be managed…;

A professional engineer (per WAC 173-350-715) should prepare these documents and calculations and would probably also need to communicate with the JHD around submittal of a permit revision to accommodate these changes. I very roughly estimate it would take an experienced P.E. who is familiar with the composting industry and the individual facility on the order of 50 hours which could easily run a single facility$5,000 just to incorporate these new plan requirements. This does not include JHD permit submittal fees and review costs (as many JHDs now charge for their time to review documents and visit sites upon permit revisions). It is even possible that a County would require a SEPA process to accompany the permit revision. This adds much more would require a SEPA process to accompany the permit revision. This adds much more costs. And none of this includes costs to the facility to implement any of the described changes.

While my business is likely to gain work related to re-doing these Operations Plans [assuming my clients don't simply go out of business], I would far prefer helping them to develop higher quality compost products, or streamline their operations to be more efficient and reduce their carbon and environmental footprints or other impacts. Those clients and their neighbors and the state would, then, get more for their money and be happier and the industry would be healthier for that investment.

Thomas, Terre-Source

Comment: A Construction Quality Assurance plan is beyond the Plan to build a facility. A compost facility should be built to the plan, which already is required to be engineered by a certified engineer of the state. This is already costly. The Health District is already charged with approving solid waste permits. This action should serve as the check for the construction assurance.

Harn, Chelan County Public Works

Comment: Added Odor Plans (Especially "Progressive Odor Management Plan"):

This is a huge waste of money for me if I have to have my Operations Plan re-written and my permit revised to accommodate that within 12-months just to satisfy these revisions. It won't change anything in my operation or make anything easier or more streamlined or more responsible or add any value to my compost products, customers or neighbors. This is just paperwork that Ecology has thought up that is going to cost money without benefit.

In closing, the economic impacts of this regulation revision are too high and will be paid predominately by the industry (facilities that remain, that is), but with no benefit to them. This

industry is providing the capacity for State and municipal recycling goals. The Cost Benefit Analysis that was performed for this regulation revision seriously underestimates the impact of these changes on my business – especially the impact of the finished compost handling requirements.

Dressel, North Mason Fiber

Comment: 173-350-220(4)(f)(ii)(B) My final major objection is the whole section adding multiple new sections and requirements to my Operations Plan. The Progressive Odor Management Plan, in particular, is not only excessive, it is counterproductive. This plan requires a list of "facility and operational improvements that could be made if nuisance odors are identified…". This provides the JHD with an easy little checklist to make a facility adhere to in the case of odor. However, it is more likely than not that the odor that actually occurs could have nothing to do with the planned and imagined odors that those 'improvements' were intended to address. Having to jump through hoops that may not have anything to do with a given odor will distract attention from identifying and resolving the actual odor issue, and will cost money un-necessarily and ineffectively.

Dressel, North Mason Fiber

Comment: We recommend that the requirements for closure be clarified and detailed in the Department's proposed rule amendments. Specific reference should be provided in a facility's closure plan to the total quantities of received feedstock and finished composted material that could be expected on site at any one time, based on the annual volume of material managed at the site. The closure plan should also require and include cost estimates for the transportation and disposal of this specified amount of material. Additionally, some type of financial assurance instrument (for example, a surety bond or letter of credit) should be required in the amount of the calculated cost estimate. Finally, the closure costs should be reviewed and updated, if necessary, annually. Please refer to composting facility standards in Wisconsin, New York, and Pennsylvania for detailed requirements regarding closure costs and financial responsibility. WAC 173-350-220(6); WAC 173-350-220(7).

Shanley, Waste Management

Ecology Responds - The Cost of Plans

Ecology estimated the costs of complying with plan requirements in the Final Cost-Benefit Analysis. Commenter's perceptions about costs of planning under the rule may be shaped by some misunderstanding of what is presently required. One commenter remarked that the rule was proposing the creation of multiple plans ranging from community outreach to progressive odor management, and felt discretion to require plans should be left entirely to the health department. Another commented about the requirement for a *multitude* of additional and individual plans. One commenter objected to the requirement for a Construction Quality Assurance plan.

The agency cannot be sure how many plans are perceived as new. We reviewed the plan requirements of the previous rule (2003; the baseline for economic analysis) against those of the new rule. Both the Community Relations (formerly Neighbor Relations) and Construction Quality Assurance plans are required under the previous rule. Therefore they represent no cost increase. The costs of existing regulations are not considered under economic analysis, only changes to existing regulations. The majority of planning requirements under the new rule existed under the

previous rule. As discussed elsewhere in this document, after further review Ecology found it concurred with commenters that the Progressive Odor Management Plan element was not a good use of resources. That plan requirement was deleted from the final rule. See the discussion in the Progressive Odor Management Plan section for more information.

Ecology expects that in many cases Plans of Operation will need to be updated. Those are living documents that should be reviewed and updated periodically in consultation with the local jurisdictional health department. Ecology foresees an additional benefit to revised language in plans of operations. The improved detail largely reflects current expectations that simply weren't clearly expressed previously, but which were nevertheless required to constitute a complete submittal. In many cases, submittals to Ecology or health departments have lacked detail and have been returned to the applicant. Ecology expects that the iterative costs of reviews and re-submittals will be reduced under the final rule.

Ecology acknowledges that there is a new element of odor management planning. Odor has become a critical consideration around compost facilities. As organics diversion increases and composting grows, appropriate planning is essential for the success of the statewide program.

Ecology does recognize a cost to plan development or revision in the economic analysis. Comments seem to reflect an assumption, or perhaps a misunderstanding, that professional engineers are expected to prepare all plan elements. As discussed in the section on Engineering Reports and Plans elsewhere in this document, that is not the case. Certainly, a facility may choose to use a professional engineer for services that may not require that license. Though a facility may choose to go beyond rule requirements in facility design, planning, and documentation, Ecology's expectation is that experienced professionals who are not engineers can meet the requirements of the rule. The agency uses average hourly rates in the private sector, by profession, and does not include overhead when these services are already being used for other reporting, planning, analysis, etc. Ecology did update the Final Cost-Benefit Analysis with information on the wage of a professional engineer, as well as a contracted outside consultant wage.

The agency received one comment on closure and financial assurance. The closure plan requires the assumption that facility is at defined capacity. Compost facilities are not disposal sites. The agency does not see a need for a financial assurance instrument because the remaining product may have value, as will the land itself. Ecology determined a requirement for financial assurance would cause significant excess burden without sufficient balancing benefit to the environment, industry, or the public, to meet Administrative Procedure Act requirements.

In summary, the elements of the adopted rule that are likely to increase costs were determined to be necessary to fulfill the goals and objectives of the rulemaking in protection of the public and environment. Ecology disagrees with the assertion that the rule has no benefit. Benefits are discussed in the economic analysis as well. In addition, Ecology disagrees with the assertion that facilities will not benefit from the amended rule. The rule provides many new or expanded exemptions but Ecology agrees that some facilities may only incur compliance costs.

Ecology does not charge for its solid waste related services. The commenter may be referring the cost of review by a local jurisdictional health department. Ecology updated the Final Cost-Benefit Analysis to include an estimate of jurisdictional health department fees associated with plan updates required by the rule.

Costs Associated with Storage of Finished Compost

The agency received many comments regarding a change in the way finished compost will be viewed by the agency under the final rule. Under the previous rule, finished compost stored at the

facility where it was produced was considered a product and not subject to further regulation. Ecology has changed that interpretation and considers finished compost to be a product when it meets standards, and is used on site or distributed off site. Finished product remaining on site may still be subject to regulation. This is discussed in the section on Compost versus Solid Waste, elsewhere in this document.

The agency response follows comments below.

Comment: I am concerned about redefining the term "capacity" as inclusive of both finished compost and all other materials on site including but not limited to curing piles, active composting, feedstocks, and bulking agents (WAC 173-350-100). Presently it is possible to produce and sell less than 1000 cubic yards of compost annually but to periodically have more than 1000 cubic yards of material on site before the beginning of each six month sale. The proposed definition of "capacity" would force a reduction of materials on site either through reducing volumes of feedstocks and producing less compost or finding new sales markets. Either option would result in increased costs. Reducing our feedstock would result in tipping fees for disposal and loss of income. Compost is typically sold seasonally in the spring and fall when compost is best applied. Costs would be incurred in locating and securing new markets to purchase finished product during the off seasons.

Not only would the change result in economic harm to our organization but the ecological advantages are unclear. If feedstocks are transported and disposed elsewhere then the carbon footprint for those materials will increase. If product is sold out of season it would likely still be stockpiled until the spring or the fall but off site without the benefits of monitoring and storm water protection.

Corum, Woodland Park Zoo

Comment: WAC 173-350-100 Definitions. Capacity. By including composted materials "finished product" into the definition of capacity, many burdensome criteria are triggered throughout the rule. As previously mentioned in our correspondence to Ms. Scanlan on March 28, 2012, once composted material passes the testing requirements and is now a product, it is no longer a solid waste and should no longer be subject to the chapter. Therefore, sections such as Design Standards (e) to treat all run-off, of product piles as leachate is costly and an unfair business advantage to those that are not subject to the same solid waste standard. Finished product storage at any location should then be subject to the rules of solid waste storage i.e.; wholesale and retail yards, etc. Therefore, to remedy the situation, as stated previously, finished compost is not a solid waste and should not be regulated under this Washington Administrative Code.

Snyder, Waste Connections

Comment: In addition, we urge that DOE revise the Preliminary Cost-Benefit Analysis which accompanies these rule revisions to cover missing cost elements which could include:

- additional leachate collection systems for the finished compost stored on site (since under this rule revision it is placed in the solid waste realm) ...

Corum, Washington Organic Recycling Council

Comment: Finally, all of the additional costs associated with the unnecessary and unsubstantiated classification of finished compost kept on site for either marketing related issues or economic conditions beyond the control of the composter in the regulatory realm of "solid waste" should be taken into consideration in the Cost-Benefit Analysis for these rule revisions. They clearly are not in the current analysis resulting in drastically underestimated costs of implementation of this regulation revision.

Corum, Washington Organic Recycling Council

Ecology Responds - Costs Associated with Storage of Finished Compost

Ecology revised the final adopted rule to exempt zoos in this type of situation.

Ecology determined that there would likely be no additional costs associated with classifying finished compost as solid waste. The agency made certain assumptions in reaching this conclusion. First, we assumed that compost distributed off site, or used on site, would have met the standards to be classified as a finished product. Otherwise its distribution off site or use on site would constitute a violation of the rules as well as the solid waste permit. There is no new requirement in this rule for stormwater management or leachate collection where finished compost is stored on site, or off site. There are no solid waste regulatory requirements to have preventative measures in place to control off-site impacts where finished product is stored, in either the previous (2003 rule) or the new rule because there has never been an allowance for these kinds of offsite impacts from finished compost. The presumption is that finished compost is a healthy organic material suitable for marketing that presents a minimal threat of offsite impacts. If this is, in fact, not the case and if off site impacts are imminent or occurring, such as to surface water or air quality, then whatever measures must be taken *were already required under existing water-quality and air-quality rules*. During this rulemaking, Ecology was not required to analyze the costs of existing regulations.

Costs Associated with new Standards for Physical Contaminants

Commenters were concerned about the new definition of physical contaminants. They expressed uncertainty about meeting the standards, and questioned Ecology's economic analysis, particularly regarding the potential cost of additional screening. They were also concerned about options for products that did not meet the new standards, and the possible cost of having to dispose of those products.

Ecology responds following the comments below.

Comment: New regulations as to contaminants, specifically the drastic reduction in film plastic allowance, will cause considerable cost increases. In the Department of Ecology's publication "Preliminary Cost-Benefit and Least Burdensome Alternative Analyses" on page 23, in the last sentence of 3.3.5.7 it is stated that "Ecology could not at this time confidently quantify the cost of finer screening of compost material." No attempt was made to include the largest single cost, due to the changes, into the report but we will attempt to address that at this point.

According to the statistics provided by the Department of Ecology the total organics diverted in 2010 was 1,491,404.61 tons. For the sake of clarity let's eliminate the need to further screen

agricultural residues, wood wastes, and land clearing debris since they most likely would not have significant amounts of plastic. That leaves us with 885,447 tons of yard and food waste diverted to composting facilities. In the past 10 years we have seen a growth rate of 6.9% annually for these materials, but only a 3% annual growth in the past 5 years. We will use the lower number for a growth rate. We will also assume that half the volume of the input material will be subject to additional screening. The cost of screening will vary from facility to facility from a low of about $1 per ton to a high of about $3 per ton, depending on equipment, ownership, overhead, and logistics. We will use a conservatively low estimated average of $1.5 per ton. Using these conservative assumptions we calculate a cost, due to these regulatory changes, to the industry over the next twenty years of $19,498,875. Using the methodology of the Department of Ecology in the "Small Business Economic Impact Statement" on page 3, this would be the equivalent of a loss of 337 jobs.

Schutt, Royal Organic Products

Comment: Our member companies are working tirelessly throughout the State to reduce incoming contaminants and residual contaminants in finished compost in order to effectively market their products and divert more and more waste from landfill disposal. We strongly encourage the Department to reconsider these proposed provisions in the rule, and reach a compromise that retains the integrity of the industry, but does not place an economic burden on processors.

Phillips, Washington State Recycling Association

Comment: The proposed rule adds a requirement that film plastic make up no more than 0.1% of finished compost, by weight. Once again we join WSRA in its support of the reduction of contamination in finished compost to the greatest extent possible, and we find it to be essential to effectively market compost. We believe the extra financial burden on our partner composters is unreasonable. Additional laboratory testing costs and processing costs could significantly reduce the competitive marketing of compost and drive down the demand for the more expensive product. Proposed Revision: Eliminate the 0.1% film plastic requirement. It is already included in the 1% total physical contamination threshold.

Huycke, Republic Services

Comment: Collection companies are working tirelessly throughout the State to reduce incoming contaminants and residual contaminants in finished compost in order to effectively market products and divert more and more waste from landfill disposal. We strongly encourage the Department to reconsider these proposed provisions in the rule, and reach a compromise that retains the integrity of the industry, but does not place an economic burden on a growing industry.

Huycke, Republic Services

Comment: What happens to composted material that fails one of the testing parameters such as the physical contamination test which really does not relate to human health concerns but more environmental concerns (placement of the contaminated material next to waterways)? Repeated screenings might fail to produce a composted material for the .1% film plastic threshold requirement. If that is the case, does that material have to be landfilled or can it be used in some

restricted land application? DOE should give some guidance regarding "composted material" that remain in the solid waste category due to failing one non-human health related criteria.

Croll, Seattle Public Utilities

Comment: In addition, we urge that DOE revise the Preliminary Cost-Benefit Analysis which accompanies these rule revisions to cover missing cost elements which could include: ...

- ...multiple screenings of composted material to meet the new physical contamination threshold regarding film plastic
- potentially having to develop sort line operation for incoming feedstocks that might not meet the 5% threshold for contaminants

DOE under Table 1 of the Executive Summary estimated the cost impacts of the new rule amendments over 20 years for the "permitted composting facility grouping" to reach the range of $313,788 - $319,140 (*due to an arithmetic error DOE actually shows the range as $175,381 - $180,731 which is not correct in the document*). This, however, only includes the cost impacts of updating Operations Plans for permitted composters, supervisor training requirements and preparation of separate odor management plans. Preliminary industry estimates of the cost of these rules to permitted composting facilities over the next 20 years for just the additional compost product screening needs alone in order to meet the proposed new film plastic limitation is in the range of $18 million - $20 million. What will be the true cost estimate to permitted composting facilities when one includes the design and installation of new leachate ponds due to once finished compost being treated as solid waste or the cost of taking much more material to the landfill due to it failing the proposed new standard for "physical contamination"? Finally, what will be the cost estimate from the unnecessary dual regulation of biosolids compost for the special grouping of composters who are planning to compost (or are already composting) biosolids and the organic fraction of MSW at their facilities?

In conclusion, DOE's preliminary cost impact analysis needs to be totally revised to accurately reflect the financial impact upon the organics processing industry in Washington State. The cost impacts of this rule revision should not be minimized or overlooked since the number of permitted composting facilities in the State has shrunk from 41 in 2007 to 33 in 2012.

Corum, Washington Organic Recycling Council

Comment: Table 220-B Testing Parameters

Physical contaminants are limited to <1 percent by weight total, not to exceed .10 film plastic

We agree with Ecology that increased household composting is likely to increase the prevalence of film plastic in feedstock; however, the requirement to limit film plastic to 0.10 percent is a potentially onerous requirement that has not been adequately evaluated. The Department of Ecology's "Small Business Economic Impact Statement", Publication No. 12-07-002 and "Preliminary Cost-Burdensome Alternative Analysis", Publication No. 12-07-001, state that "<u>Ecology believes facilities through contracting with feedstock providers, or additional screening of compost can comply with this new requirement</u>." and, <u>"Ecology could not at this time confidently quantify the cost of finer screening of compost material</u>." respectively. Based on the lack of information provided in the analyses we do not believe that imposing this more restrictive

requirement is prudent at this time. A more complete impact analysis and list of alternatives to meet this new requirement should be developed prior to implementation of a new standard.

We recommended no change to the current performance standard for manufactured inerts.

Wheeler, Lenz Earthworks

Comment: New Definitions of Compost Incur Significant Costs on the Industry

Ecology rulemaking introduces more stringent parameters for finished compost which are not supported by science, will increase the cost of compost operations and are not accounted for in the agency's cost- benefit analysis.

Not supported by science. Ecology's proposed definitions add rocks, plastics, textiles, rubber and leather to its list of "contaminants" without altering the "less than 1% by weight" limit. In the specific case of rocks, a small amount of dense rocks may cause a compost pile to fail the 1% weight limit of physical contaminants… Ecology has not demonstrated a human-health or environmental threat from rocks in finished compost.

Ecology's proposed definitions also restrict the amount of film plastics in finished compost to 0.1% by weight. Ecology refers to the environmental concerns associated with film plastics,

"...physical contamination from compost...gradually rises to the surface and enters surface waters, creating risk to terrestrial and aquatic species." [1]

Ecology, however, provides no scientific analysis to quantify this risk. The 1/1000th weight limit for film plastic is arbitrary and will incur significant costs on the composting industry. According to recent waste characterization data from the City of Seattle, film plastics in incoming feedstock streams are 6 times higher than this limit in the commercial sector and 11times higher than this limit in multifamily organic streams. The processing required to reduce these contaminants to Ecology's proposed regulatory limit is significant, but it has not been accounted for in the rulemaking's cost-benefit analysis.[2]

The agency acknowledges the increased cost,

"This could result in...increased average prices of compost, due to the additional screening required..."[3]

Yet the agency concluded that it, "...could not at this time confidently quantify the cost of finer screening of compost material[4]," so it ignored these new expenses in its cost benefit analysis. Cedar Grove estimates that the incremental cost of additional screening exceeds $1/ton of processed materials[5] . According to same methodology used in the cost-benefit analysis, this would add an $18.9 million cost to composters. As a point of reference, the entire benefit for the rule is estimated to be $698,117.

Suggested amendments...

- •...Eliminate film plastic limit. It is already included in the 1% limit for Physical Contaminants.

Bartlett, Cedar Grove Composting

Ecology Responds-Costs Associated with Standards for Contaminants

Compost standards are described in Table 220 B of the rule. The only remaining change of significance is with respect to physical contaminants. Rocks were removed from the final definition of physical contaminants as discussed in that section elsewhere in this document. The proposed definition of physical contaminants was either broader than composters were comfortable with, or the threshold was lower than composters were comfortable with. The definition of physical contaminants did not change in the final rule:

> Physical contaminants*" as they relate to incoming feedstocks and compost quality means inorganic and organic constituents that are not readily decomposed during the composting process including, but not limited to, plastics, glass, textiles, rubber, leather, metal, ceramics, polystyrene, and wood pieces containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate.*

The proposed and final rule set a limit of 1% by weight for all physical contaminants. This is consistent with the previous standard in the rule and the limit set by the U.S. Compost Council, except that in the case of the current USCC standard, only metals, plastic, and glass are counted. As the 1% limit is consistent with previous standards, Ecology did not analyze its impacts as a change.

Ecology also proposed a limit of 0.1% by weight for film plastic. Composters were very concerned about this value. The proposed standard was based in part on a visual assessment of compost with 0.25% film plastic, which observers found unacceptable. After hearing composters' concerns and performing its own testing, however, Ecology increased the limit in the final rule to 0.25%, but will require composters to inform customers regarding excess film plastic in the product with a label or information sheet. Informing customers using amended existing product packaging, labels, and information sheets is likely to be a minimal cost. The rule also places limits on where products with more than 0.1% film plastic (and less than 0.25% film plastic) can be used, and requires containment of contaminants on site or removal. Ecology does not believe this limitation of use creates costs, as under the baseline Ecology considers such product inappropriate in areas where they would contaminate the environment.

Regarding the limits, consider some basic math. If a yard of compost weighs 800 pounds at 50% moisture, a 1% dry weight standard for physical contaminants in one yard of material is four pounds. Four pounds is a lot of material when it comes to physical contaminants in a single yard. A quarter pound of film plastic represents a very large surface area, depending on its density.

Materials with more than 1% physical contaminants or more than 0.25% film plastic are considered solid waste. Final products that do not meet the physical contaminant standards can be reprocessed, used as bedding or cover material in static systems, or disposed.

Some commenters questioned whether there was in fact a legitimate health or environmental concern with contaminants, particularly film plastic, and suggested the matter was one of marketing and should be left to the discretion of purchasers.

Ecology recognizes that composters are not the immediate source of the physical contaminants problem. There is no basis for the belief that some amount of solid waste is acceptable in a final compost product. Whether it poses an immediate hazard or not, it is aesthetically objectionable and results in extra expenses to users who are obliged to pick up bits of plastic, glass, and other trash that constitutes litter. Although they are a reportedly small percentage of total production,

coarse products screened to two and three inches have been particularly problematic, possibly where commercial food waste is a significant feedstock. Although we appreciate industry's efforts to resolve this problem, the Washington State Department of Transportation – the state's single largest purchaser of compost products, has moved away from specifying those products *because of extensive problems with trash*. In addition, Ecology has heard similar complaints from other users and has witnessed the problem firsthand. DOT is now considering alternative materials where coarse compost might otherwise have been suitable. While DOT has apparently not completely banned the use of their specified coarse products, the presence of contaminants in those products is clearly damaging the market. Ecology believes consumers expect some assurance regarding contaminants in compost.

As discussed in the section on Physical Contaminants in this document, prior to adopting the rule Ecology sampled about a dozen compost products at eight compost facilities around the state. Samples were drawn from products typically marketed, produced in the normal fashion of each facility (one composter was having difficulty with screening equipment, but what was available was sampled). All but one of more than sixty samples passed both the new standards, including those that had some portion of food waste as a feedstock. Samples collected by Ecology were screened one inch or smaller.

Ecology recognizes that coarser products may fail the standard, especially where commercial food waste is part of the feedstock. As discussed, the amount of contaminants found in some such products are unacceptable as an environmental standard for litter, if for no other reason. Ecology has no evidence to suggest that the majority of compost and the majority of composters will not meet the standard, which the agency believes is a reasonable threshold. Additionally, Ecology has given composters an important tool, the ability to say no to contaminated loads or to offer an alternative sorting option where the cost would presumably be passed back to the source.

One commenter was concerned about the cost of sorting trash from compost. Ecology understands that some contaminants will arrive at the tipping location. The final rule now requires composters to either reject loads with more than five percent by volume of contaminants, or have a plan to segregate and clean up those loads before using them as feedstocks. At least one commenter was concerned about the cost of implementing sort lines. Ecology expects these costs can be passed back to the generator if the loads are not meeting the contamination requirements. This has reportedly worked well for one large composter. Ecology does not consider there to be an economic impact regarding coarser products because when heavily contaminated these products are not acceptable in the environment, as discussed in the section on Compost versus Solid Waste.

The Cost-Benefit Analysis has been updated to a final version in response to public comments.

The elements of the adopted rule that are likely to increase costs were determined to be necessary to fulfill the goals and objectives of the rulemaking to protect public health and environment. Ecology determined, based on its sampling, that many businesses are not likely to encounter additional costs related to feedstock or final product contamination.

Ecology relaxed the plastics standard in the final adopted rule, and does not believe additional screening will be necessary for plastics in most cases. Ecology's sampling of compost at existing facilities showed that plastics content in a subset of coarse compost samples would not meet the 0.1 percent standard at facilities that accept municipal food waste. Under the final adopted rule, however, compost with plastics content between 0.1 and 0.25 percent would not require extra screening, but do require additional labeling (or information provided) at minimal cost.

Ecology acknowledges that the intake contamination standard would require, in some cases (the minority of cases, and only at a facility accepting municipal food waste, per Ecology sampling),

clean up of incoming materials, or alternate sourcing. Ecology believes, however, that businesses could achieve this at lower cost through contracting requirements with their sources of material and informational campaigns upstream. The Final Cost-Benefit Analysis has been updated to note this cost.

Ecology believes it will be essential for composters to implement the provisions of the rule that allow rejection of loads with five percent or more contamination, or develop a cost reimbursement arrangement with sources. We believe this is the only way coarser grade products such as those wanted by the State Department of Transportation are likely to meet the standard where food waste is a feedstock.

Ecology did not determine that costs of the final adopted rule would be so prohibitive to ongoing business as to cause a facility shutdown. Please see the Final Cost-Benefit Analysis for costs.

See also the discussion under the section on Physical Contaminants.

Local Costs

Ecology responds individually to the comments in this section.

Comment: Page 24 - (3) (a) (ii) (b). Most LHJs do not have engineers or staff that can fully review the documents required under this section. Can the WAC state somewhere, perhaps under 173-350-710, that the LHJ can charge the applicant costs for retaining engineering services necessary to review these plans in needed?

Starry, Thurston County Environmental Health

Response: Ecology does not have the authority to authorize fees for local health departments. Local authority can be found in RCW 70.95.180(5): *The jurisdictional board of health may establish reasonable fees for permits and renewal of permits. All permit fees collected by the health department shall be deposited in the treasury and to the account from which the health department's operating expenses are paid.* One commenter elsewhere in this document remarked on a $95 per hour fee charged by Ecology for permit review. As point of clarification, we do not charge such fees, but we are aware that some health jurisdictions are able to recover costs. We expect this is enabled through adoption of local fee related ordinances.

Comment: The end result of contaminated water is we have to treat it. And that's one of things as an operator of a water system. EPA has mandates to us that we have to test for certain constituents in our water. And that costs when we bring a new well on line, that costs for one well about $15,000 because we have to do quarterly sampling for all of those constituents. $15,000 for one well. And to me, when we have the economy that we do in Yakima Valley, in our area, you got a lot of low-income families that live there that cannot bear the costs of those kinds of costs associated with having, 'cause you have to pass that on to somebody; you have to pass those costs onto the consumer. And everybody says "Oh, everybody eventually is going to have to get on a community water system." Yeah, we're going to be forced to. Because, there is no regulation, within this area, as far as regulating these kinds of facilities that we're talking about. So I think as far as coming from a rural area, one of the greatest concerns I have and I've never seen it, yet. When we first started this, we had all of the agencies put up all of their responsibilities on walls, all the way around and they put all of their responsibilities. But there wasn't anybody that wrote anything regulatory. And I asked because we had all of those agencies there at the time. I asked "Who is regulatory here?" We had licensing, but we did not have anybody regulatory. And to me that's absent, that's very absent. And we need to start protecting you know the people that live

within this reservation because our water resources aren't going to be here forever especially if we allow business to take over, and regulate based on how many jobs they produce in this valley.

White, Citizen, Toppenish (Public Testimony)

Response: Like the commenter, Ecology values clean groundwater. Groundwater monitoring is not required at compost facilities, although production is required to be carried out on an engineered pad. We do not believe the proper use of compost in lawns, home gardens, or agriculture poses a threat to groundwater. The commenter, however, appears to be concerned with groundwater impacts from other sources (perhaps any and all sources). We understand and appreciate that concern, although we cannot directly address it in this rulemaking effort.

Comment: The Tulalip Reservation along with the Cities of Everett and Marysville have been struggling for over three years to solve the odor issues with the Cedar Grove operations in Everett. It is costing our communities a lot of time, money and effort to try to deal with the situation, without a good answer in sight. At this point, it looks like our communities are going to have to spend a lot more money to hire an independent contractor to do an odor study and take the issue to court. Cooperation between us and the permitting agencies has seen little to no progress to this point. We need to have better and enforceable rules and regulations that help to solve these issues. Currently, the individual neighboring residents and local governments impacted by the operations, are having to try to solve the issues themselves, because state and regional agencies with jurisdiction seem to be either unable to or unwilling to take meaningful actions to solve the local problems.

Williams, Tulalip Tribes

Response: Ecology attempted to qualitatively reflect these impacts in the Preliminary Cost-Benefit Analysis. In the Final Cost-Benefit Analysis, Ecology could not confidently quantify the health impacts associated specifically with compost facilities, without significant investigation, study, and analysis of specific sites and residences, as well as area and future real estate market attributes. Ecology did, however, add a quantified component to the benefits of odor management, reflecting the range of impacts that odors can have on property values (which reflect the value of a bundled set of property, lifestyle, use, health, community, and other variables associated with a home). Please see the Final Cost-Benefit Analysis for these changes.

Comments Criticizing the Economic Method

Most comments regarding Ecology's economic analysis were associated with a specific concern, for example, the cost implications of the new standard for physical contaminants. Some comments were more critical of the economic methods, the agency's assumptions or even the math involved. In this section, Ecology is addressing the latter group of comments – those more concerned with the method itself. Readers are referred to the sections above for more information on the economic impacts to specific program elements. **Selected comments are responded to individually, below**.

Comment: New regulations as to contaminants, specifically the drastic reduction in film plastic allowance, will cause considerable cost increases. In the Department of Ecology's publication "Preliminary Cost-Benefit and Least Burdensome Alternative Analyses" on page 23, in the last sentence of 3.3.5.7 it is stated that "Ecology could not at this time confidently quantify the cost of finer screening of compost material." No attempt was made to include the largest single cost, due to the changes, into the report but we will attempt to address that at this point.

According to the statistics provided by the Department of Ecology the total organics diverted in 2010 was 1,491,404.61 tons. For the sake of clarity let's eliminate the need to further screen agricultural residues, wood wastes, and land clearing debris since they most likely would not have significant amounts of plastic. That leaves us with 885,447 tons of yard and food waste diverted to composting facilities. In the past 10 years we have seen a growth rate of 6.9% annually for these materials, but only a 3% annual growth in the past 5 years. We will use the lower number for a growth rate. We will also assume that half the volume of the input material will be subject to additional screening. The cost of screening will vary from facility to facility from a low of about $1 per ton to a high of about $3 per ton, depending on equipment, ownership, overhead, and logistics. We will use a conservatively low estimated average of $1.5 per ton. Using these conservative assumptions we calculate a cost, due to these regulatory changes, to the industry over the next twenty years of $19,498,875. Using the methodology of the Department of Ecology in the "Small Business Economic Impact Statement" on page 3, this would be the equivalent of a loss of 337 jobs.

Schutt, Royal Organic Products

Response: Ecology has discussed its findings regarding physical contaminants above in this section. The agency appreciates the math involved, but believes the assumptions in the comment are incorrect. First, based on the results of Ecology's sampling effort and other anecdotal information, it appears that current screening efforts are largely successful. In terms of assumptions, the agency would not expect that a composter would screen one product or only a combination of products prone to contamination. More likely it will be a combination of feedstocks. This means a less contaminated feedstock will have the effect of diluting physical contaminants in the final product. The rule also requires loads with more than five percent contamination to be rejected or cleaned up. Collection programs that deliver significant volumes of contaminated organics will need to reassess and work with composters to resolve that problem.

Ecology relaxed the plastics standard in the final adopted rule, and under its regulation does not believe additional screening will be necessary for plastics in compost not considered to be solid waste. Ecology sampled higher-quality compost at existing facilities, and determined plastics content in a subset of coarse compost samples would not meet the 0.1 percent standard at facilities that accept municipal food waste. Under the final adopted rule, however, compost with plastics content between 0.1 and 0.25 percent would not require extra screening, but additional labeling (or information provision) at minimal cost. While Ecology understands this comment for the more restrictive proposed rule, the Final Cost-Benefit Analysis does not include additional screening costs, lack of competitiveness, or landfilling costs because the final rule requirements have changed, and because coarse, highly-contaminated material is considered a solid waste under both baseline and adopted regulation, and action to reject or clean that material is necessary regardless.

Comment: In closing, the economic impacts of this regulation revision are too high and will be paid predominately by the industry (facilities that remain, that is), but with no benefit to them. This industry is providing the capacity for State and municipal recycling goals. The Cost Benefit Analysis that was performed for this regulation revision seriously underestimates the impact of these changes on my business – especially the impact of the finished compost handling requirements.

In the preamble of that analysis there were 4 reasons given for revising this regulation. One purports to "Maintain strong environmental and human-health standards while expanding organics recycling". I can pretty much guarantee the industry will not be "expanding organics recycling"

under these rules. On the contrary, these revisions are quite likely to reduce the industry. My 80,000 ton per year permitted capacity, for instance, will be eliminated.

Another reason given was to "Respond to business and public concerns regarding compost products". Because Ecology's expertise and mandate are environmental, not business or market-oriented, unintended consequences are a strong likelihood. I humbly submit that after doing this for over 10-years, I and other composters who are in business processing and marketing these organic products are much better suited to accomplish this goal without additional market and aesthetic regulation by Ecology.

While the current regulation is not perfect, it is far preferable to these revisions. Please correct these revisions or drop them entirely in support of recycling.

Dressel, North Mason Fiber

Response: Ecology has made specific recommendations for this commenter elsewhere in this document which we hope will further alleviate some of the economic burden due to the nature of his operations. Ecology believes that offsite impacts and compost quality must be addressed in order to fulfill our statutory mandates, and to secure the future of an expanding organics program.

Ecology estimated costs of the rule changes where they exist, for changes in planning and training. Many final product handling requirements are not, however, changes. Under both the baseline and proposed rule, finished product must not violate water-quality or air-quality regulations, and contaminated material is a solid waste (see discussion elsewhere in this document). Ecology clarified several issues that were the source of some cost concerns for commenters, including the requirement for leachate collection in areas where finished product is stored and requirements for professional engineering services. Ecology removed some requirements for handling and sale or removal of final product from the final rule.

Comment: We also need to re-examine the costs of the new plans. The most costly plan identified by Ecology is the Progressive Odor Management Plan. This plan would have us guess at a future problem and guess at a future solution while incorporating nearly all aspects of production. Those kinds of decisions could lock us into a system that may not be logical in case of an actual incident, and would not be left to someone paid "prevailing wage". It would most likely require an outside engineering consultant, if existing management or engineering capabilities were not adequate. The cost of employee would be more like $30 an hour plus an additional (as it would be for any employee cost) of about 43% for taxes, benefits, and payroll overhead. These figures should be conservatively low as the Dept. of Ecology charges facilities $95/hr to review documents. This increases the cost estimate from the high published by 122% to $56,563.38. Adjusting the other numbers in Table 3 of the "Preliminary Cost-Benefit and Least Burdensome Alternative Analyses" to account for employee costs in 2012 dollars, the total costs of the rule changes is now $498,807 not including the extra screening. The total cost of the proposed rule changes, to the industry over the next 20 years, would be a minimum of $19,988,682. That number does not include other facility upgrades needed to comply with other issues regarding what is compost and what is solid waste.

Schutt, Royal Organic Products

Response: Ecology has responded to this comment in the section above on plans. Ecology included estimates in the final economic analysis including professional engineer wages, outside consultants, and plan updating or review fees.

Comment: DOE estimated that the cost impacts per permitted facility of these rule amendments over a 20-year time period could reach the range of $175,381 - $180,731. This analysis is significantly flawed, however, in that it does not include many costs that will be incurred to meet the new regulatory standards. These include in part the costs related to ensuring minimal contamination of incoming loads (by governments, collectors, facilities, etc.), additional sorting and screening, costs related to rejected loads and presumably the landfill disposal of those loads, and the costs of treating finished compost as "solid waste" rather than a product. The Preliminary Cost Benefit and Least Burdensome Alternative Analysis should be revised to include these other potential costs.

To provide a sense of scale of effort, Snohomish County Solid Waste Division alone plans to spend $40,000 in 2013 to conduct outreach to commercial organics generators to help decrease contamination of incoming feedstocks. We provide this as an example of how costs will be incurred by others other than the compost facilities and to demonstrate that the proposed rules will be far more costly than documented in the preliminary analysis. Additional costs will be incurred by curbside collectors and others that utilize organics com posting services, and the cost of finished compost may increase also. Increased costs are not necessarily inappropriate, but the cost benefit analysis should provide more accurate analysis.

Jackson, Snohomish County Public Works

Response: Ecology acknowledges that the intake contamination standard would require, in some cases (the minority of cases, and only at a facility accepting municipal food waste, per Ecology sampling), clean up of incoming materials, or alternate sourcing. Ecology believes, however, that businesses and local governments could achieve this at lower cost through contracting requirements and informational campaigns upstream. The Final Cost-Benefit Analysis has been updated to reflect this cost.

Aside from special cases, Ecology agrees that increased costs that are not mitigated for in other areas of business (increased total marginal costs) will likely result in price increases of the product offered for sale. It is Ecology's standard practice to review only first-round (the first impacts, before they are passed on; for example, not price or market impacts of costs, or productivity or market impacts of benefits) impacts of proposed and final rules. In the Small Business Economic Impact Statement (when one is required) Ecology does, however, reflect the impacts of costs as they flow through markets and the economy, using the OFM Input-Output Model developed for Washington State. This is the model used to estimate flow-through job losses across all industries, for example.

Comment: The additional costs of site design, operations, inspections and reporting changes is significant. Contrary to the economic impact analysis we feel these costs could be very significant and warrant further review. Our concern about these impacts is heightened as a result of the time for compliance and reporting on these changes has been cut in half. As a partner to Cedar Grove we have concerns about these additional costs and our limited ability to pass these costs through to end users. Proposed revision: A re-evaluation of these potential costs should occur and a more through cost benefit analysis should be conducted especially in light our the Departments desire to increase composting.

Huycke, Republic Services

Response: Ecology disagrees with the characterization that the time for compliance and reporting has been cut in half. The timeframes for implementation in the previous rule were based on an

entirely different circumstance- it was a new chapter. Ecology gave facilities time to come into compliance with the new requirements instead of having all requirements become effective when the amended rule goes into effect 31 days after it is adopted. For more information on the timeframe for meeting various elements of the new rule, see the section on Effective Dates. Ecology believes the time provided is reasonable. We have also pointed out the potential for a variance where there are no imminent threats to health or the environment.

Comment: Ecology's estimate of the cost of the Operations Plan changes of 20-hours by someone making a prevailing wage of $16.86 - $19.30 is so far off it is insulting. The changes required to an existing Operations Plan in this revised regulation, at a minimum, include:

- Calculation and description of "Maximum Capacity"
- Calculation and description of "Throughput"
- Description of how to "prevent the migration of agricultural pests"
- Procedure to reduce physical contaminants in composted materials to meet testing parameters in Table 220B
- Change in analytical parameters and frequency at which the compost must be sampled
- List of feedstocks with general description of the source (removing reference to Type
- I, II, III and VI feedstocks)
- Revision of the Leachate Management plan to accommodate leachate collection on
- Finished Compost Plans
- Description of how facility staff will receive appropriate training…
- ODOR PLANS: Plan to control air contaminants; Plan to document odor complaints, Progressive Odor Management Plan; Nuisance Odor Prevention and control elements of facility maintenance activities; Description of how feedstocks with high moisture or potential for high odors will be managed…;

A professional engineer (per WAC 173-350-715) should prepare these documents and calculations and would probably also need to communicate with the JHD around submittal of a permit revision to accommodate these changes. I very roughly estimate it would take an experienced P.E. who is familiar with the composting industry and the individual facility on the order of 50 hours which could easily run a single facility$5,000 just to incorporate these new plan requirements. This does not include JHD permit submittal fees and review costs (as many JHDs now charge for their time to review documents and visit sites upon permit revisions). It is even possible that a County would require a SEPA process to accompany the permit revision. This adds much more would require a SEPA process to accompany the permit revision. This adds much more costs. And none of this includes costs to the facility to implement any of the described changes.

While my business is likely to gain work related to re-doing these Operations Plans [assuming my clients don't simply go out of business], I would far prefer helping them to develop higher quality compost products, or streamline their operations to be more efficient and reduce their carbon and environmental footprints or other impacts. Those clients and their neighbors and the state would, then, get more for their money and be happier and the industry would be healthier for that investment.

Thomas, Terre-Source

Response: Ecology has responded to this comment above. We did revise the economic analysis to reflect higher costs for engineers and environmental consultants. As discussed, Ecology does not agree with the assumption that an engineer should or must perform all related work, and so also included internal and lower-wage employees in the range of cost estimates.

Comment: Finally, all of the additional costs associated with the unnecessary and unsubstantiated classification of finished compost kept on site for either marketing related issues or economic conditions beyond the control of the composter in the regulatory realm of "solid waste" should be taken into consideration in the Cost-Benefit Analysis for these rule revisions. They clearly are not in the current analysis resulting in drastically underestimated costs of implementation of this regulation revision.

Corum, Washington Organic Recycling Council

Response: Ecology has addressed the issue of compost versus solid waste above in this section, and elsewhere in the document.

Comment: There is a pervasive assumption in these analyses that all permitted compost facilities are owned and operated by large businesses. This is far from the truth. Many permitted facilities are family owned and/or small businesses. Additionally, many of the companies that service the compost industry in Washington state are small businesses. Assuming that only large corporations will be impacted and can afford these excessive and ineffective regulations is inaccurate and will damage the economy of our state as well as my livelihood.

Additionally, this document (Preliminary Cost-Benefit and Least Burdensome Alternative Analyses) not only massively underestimates the costs of implementing all these revisions, it also purports benefits that I do not believe will be realized. This document should be re-thought and re-written.

Thomas, Terre-Source

Response: Ecology does not assume that all permitted facilities are owned by large businesses. Ecology identified, per the Regulatory Fairness Act, permitted small businesses as having 50 or fewer employees, and included these identifications in the rule record. Ecology reached its conclusion on small-business impacts in the Small Business Economic Impact Statement based on also including the numerous small businesses likely benefitting (experiencing reduced costs) under the rule, through new and expanded exemptions. Ecology disagrees with this assessment of the rule in achieving protection goals.

Comment: Table 220-B Testing Parameters

Physical contaminants are limited to <1 percent by weight total, not to exceed .10 film plastic

We agree with Ecology that increased household composting is likely to increase the prevalence of film plastic in feedstock; however, the requirement to limit film plastic to 0.10 percent is a potentially onerous requirement that has not been adequately evaluated. The Department of Ecology's "Small Business Economic Impact Statement", Publication No. 12-07-002 and "Preliminary Cost-Burdensome Alternative Analysis", Publication No. 12-07-001, state that "<u>Ecology believes facilities through contracting with feedstock providers, or additional screening of compost can comply with this new requirement</u>." and, <u>"Ecology could not at this time confidently quantify the cost of finer screening of compost material</u>." respectively. Based on the lack of information provided in the analyses we do not believe that imposing this more restrictive

requirement is prudent at this time. A more complete impact analysis and list of alternatives to meet this new requirement should be developed prior to implementation of a new standard.

We recommended no change to the current performance standard for manufactured inerts.

Wheeler, Lenz Earthworks

Response: Ecology has addressed the question of physical contaminants and film plastic, above.

Comment: Cost-Benefit Analysis is Fatally Flawed

The Cost-Benefit and Least Burdensome Alternative Analysis failed to incorporate the equipment, labor and operational costs associated with the rule. This omission is a fatal flaw in the analysis, ignoring a 60-fold increase in the costs attributable to this rule.

Bartlett, Cedar Grove Composting

Response: Ecology estimated the costs associated with rule changes. Comments that the rule requires additional equipment (e.g., leachate management), additional labor not in Ecology's estimates (e.g., for plans that are required under the baseline), and operational costs (e.g., rejection of loads) are addressed above. Ecology estimated costs only for rule changes from the baseline previous rule, and that are not otherwise required by other rules or laws.

Comment: Cost-Benefit Analysis is Fatally Flawed

In Executive Order 10-06, Governor Gregoire determined that both "small businesses and governments benefit from having a stable and predictable regulatory environment." She, therefore, set high standards for rulemaking for each Washington State agency. One such threshold was to require consultation with the small business community regarding any rulemaking that has a small business impact.

The Preliminary Cost-Benefit and Least Burdensome Alternative Analyses for the proposed composting rulemaking concludes that "there is reasonable likelihood that estimated benefits of the proposed rules amendments exceed their costs"[8]

The analysis concludes this because "the total quantifiable present-value costs of the proposed rule amendments are approximately $175,381- $180,731" while the benefits near $700,000.

The first concern with this report is that there is an arithmetic error (highlighted cells) in the total20- year cost. Below is a reproduction of the report's Table 1which summarizes the costs of the rulemaking:

Composter Costs	Low	High
Update plans for group 4 composters	$2,293	$2,625
Supervisor training	$276,815	$276,815
Odor Plan	$22,258	$25,479
Closure Plan	$556	$637
Anaerobic Digester Costs	**Low**	**High**
Operating report	$11,720	$13,416
Closure plan	$146	$168
TOTAL 20-VEAR COSTS	**$175,381**	**$180,731**

A corrected Table 1 is produced below where the total 20-year costs are $313,788-$319,140:

Composter Costs	Low	High
Update plans for group 4 composters	$2,293	$2,625
Supervisor training	$276,815	$276,815
Odor Plan	$22,258	$25,479
Closure Plan	$556	$637
Anaerobic Digester Costs	**Low**	**High**
Operating report	$11,720	$13,416
Closure plan	$146	$168
TOTAL 20-VEAR COSTS	**$313,788**	**$319,140**

With the corrected information, the report's initial assessment of benefits exceeding costs still seems to hold true.

	Costs (Average)	Benefits
Composters	$303,739	$398,924
Anaerobic Digesters	$12,725	$299,193
Total	$316,464	$698,117

Unfortunately, the reports treatment of costs incurred by the regulation is inadequate. Although claiming to make "assumptions that would overestimate costs," the report ignores significant areas of new expenses mandated by the rulemaking.

In order to comply with the contamination restrictions currently embedded in the rule-making, Cedar Grove estimates that each facility would require screening equipment and labor in excess of $1per processed ton. These costs include the screening equipment necessary to reduce film plastic contamination, including trammels, processing screens, air knives and plastic separators, as well as labor and fuel expenses. Over a 20-year period, this would add $18.9 million of costs onto the composting industry.

With the inclusion of these expenses, the costs of the rule making outpace the benefits by a factor of over 25 to 1.

NOTE: *The commenter submitted a graphic here which Ecology could not reproduce in this document from the submittal. Readers can find it in the appendix with the complete submittal. The graphic shows benefits of the rule of less than $1,000,000 and costs of more than $18,000,000.*

The omission of these additional expenses is a fatal flaw to the cost-benefit analysis.

Suggested actions

Revise the Cost-Benefit and Least Burdensome Alternative Analysis before further rulemaking. Comply with Governor Gregoire's Executive Order 10-06 and consult with small businesses on mitigation of costs associated with rulemaking.

Bartlett, Cedar Grove Composting

Response: Ecology corrected the table wherever it occurs in the Final Cost-Benefit Analysis. With respect to contamination, Cedar Grove was one of the facilities sampled by Ecology. We sampled both a fine and a coarse product. The numbers in the coarse product were elevated, but all samples passed the 1% threshold for total contaminants, and fell below the 0.25% threshold for film plastics. As discussed elsewhere in this document, this was generally the case for all facilities. Most samples easily passed the 0.1% film plastic standard, and in many cases met that standard for total contaminants as well. Of the product that does not meet a 0.25% threshold for film plastics (or the 1% threshold for all contaminants) is considered a solid waste under the baseline as well as the final rule, and Ecology believes any additional costs of screening this material are not a result of the rule.

Comment: In addition, we urge that DOE revise the Preliminary Cost-Benefit Analysis which accompanies these rule revisions to cover missing cost elements which could include:

- additional leachate collection systems for the finished compost stored on site (since under this rule revision it is placed in the solid waste realm)
- multiple screenings of composted material to meet the new physical contamination threshold regarding film plastic
- potentially having to develop sort line operation for incoming feedstocks that might not meet the 5% threshold for contaminants

DOE under Table 1 of the Executive Summary estimated the cost impacts of the new rule amendments over 20 years for the "permitted composting facility grouping" to reach the range of $313,788 - $319,140 (*due to an arithmetic error DOE actually shows the range as $175,381 - $180,731 which is not correct in the document*). This, however, only includes the cost impacts of updating Operations Plans for permitted composters, supervisor training requirements and preparation of separate odor management plans. Preliminary industry estimates of the cost of these rules to permitted composting facilities over the next 20 years for just the additional compost product screening needs alone in order to meet the proposed new film plastic limitation is in the range of $18 million - $20 million. What will be the true cost estimate to permitted composting facilities when one includes the design and installation of new leachate ponds due to once finished compost being treated as solid waste or the cost of taking much more material to the landfill due to it failing the proposed new standard for "physical contamination"? Finally, what will be the cost estimate from the unnecessary dual regulation of biosolids compost for the special grouping of composters who are planning to compost (or are already composting) biosolids and the organic fraction of MSW at their facilities?

In conclusion, DOE's preliminary cost impact analysis needs to be totally revised to accurately reflect the financial impact upon the organics processing industry in Washington State. The cost impacts of this rule revision should not be minimized or overlooked since the number of permitted composting facilities in the State has shrunk from 41 in 2007 to 33 in 2012.

Corum, Washington Organic Recycling Council

Response: The economic analysis has been revised, and the error in arithmetic has been corrected. As discussed elsewhere in this document, leachate collection is not required in areas of finished product storage unless offsite impacts are occurring. Offsite impacts are not allowable under current water quality laws, so to that extent this rule does not impose additional requirements. As stated above, it does not appear that multiple screenings will be necessary to meet the new standard for physical contaminants, as prospects for compliance appear very high with the possible

exception of coarser products with a high content of food waste in the feedstock. The agency has provided composters a significant tool in the ability to reject contaminated loads. Source programs that find their loads rejected will have to pay a tipping fee for disposal, or alternatively may want to negotiate a cost for the compost facility to remove physical contaminants prior to processing the material. This has worked well for one large composter. Ecology expects costs to be passed back to the source. Therefore Ecology disagrees that it has underestimated the cost of these rules.

Errata

Ecology thanks commenters for identifying errors in the text of the rule. ***A response follows each comment below.***

Comment: Page 19, comment on 3rd column under (b) and (c)(i)

(b) If agricultural farm is only managing agricultural waste and not distributing composted material off farm, then notification in (3)(a) ~~(i)~~ of this table is not required.

(c) Agricultural farms managing more than 20 cubic yards of organic materials on-farm at any one time and distributing composted material off-site must meet the following conditions: (i) Meet the conditions of (3)(a) ~~(i)~~ of this table;

Delete (i)

Pon, Public Health - Seattle & King County

Response: All tables were re-formatted and addressed these errors

Comment: Page 29, WAC 173-350-220(4)(a)(vi)(A) proper capitalization

Capitalize Washington Organic Recycling Council

Pon, Public Health - Seattle & King County.

Response: The name of the organization was submitted to the Code Reviser's Office capitalized. They are responsible for standards in rule. Apparently, the standard for state rules is that only the names of national organizations are capitalized.

Comment: Page 28 - (vi)(A) last sentence - ***Washington*** Organic Recycling Council needs to be capitalized.

Starry, Thurston County Environmental Health

Response: See response to Pon, above.

Comment: Page 31, insert period in 2nd line at top of page

After "site specific service conditions."

Pon, Public Health - Seattle & King County

Response: The text was hard to follow in this area. After review we found a colon in the proper place and the suggested change was not needed.

Comment: Table 220-A

Under sections (3) (b) and (3) (c) (i) it sites section (3) (a) (i), there is no section (3) (a) (i).

Deatherage, Barr-Tech

Response: Comment noted. The table was revised.

Comment: Page 19 –Table 220 A

(3)(b) and (i), should read, meet the requirement s in (3)(a) not (3)(a)(i).

Starry, Thurston County Environmental Health

Response: All tables were re-formatted and addressed these errors

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Comment: Page 24 - (a)(ii) last sentence, change force to forced.

Starry, Thurston County Environmental Health

Response: The change was made as suggested.

List of Commenters and Index to Comments

The table below lists the names of organizations or individuals who submitted a comment on the rule proposal. Following the table is an index of comments, by name of contributor.

Forty persons submitted comments and/or offered testimony at public hearings on the proposed rule. All submittals received by the department can be found in Appendix A. Three sets of comments were received late and are included in the appendix, but were not included in the formal response to comments. Transcripts of public testimony can be found in Appendix B.

Commenter	Organization	Remark
Bader, David	Environmental Health Services	
Bajsarowicz, Janusz	Pacific Topsoils	
Bartlett, Jerry	Cedar Grove Composting	
Bary, Andy	WSU Cooperative Extension	
Brinton, Will	Woods End Farm and Laboratories (late)	Appendix Only
Brower, Jan	Kitsap Public Health District	
Campbell, Patricia	Kitsap County Public Works	
Cooper, Tim	Northwest Biosolids Management Association	
Corum, Dan	Washington Organic Recycling Council	
Corum, Dan	Woodland Park Zoo	
Croll, Timothy	Seattle Public Utilities	
Deatherage, Scott	Barr-Tech	
Dressel, Robert	North Mason Fiber	
Durfey, Chelsea	Natural Selection Farms	
Enger, Aran	Snohomish Health District	
Finch, Richard	Citizen, Pullman	
Finch, Richard	Washington State University (late)	Appendix Only
Harn, Brenda	Chelan County Public Works	
Huycke, Mike	Republic Services	
Jackson, Sego	Snohomish County Public Works	
Kato, Gary	City of Tacoma Public Works	
LeSueur, Larry	WISErg Corp	
Lovaas, Brad	Washington Refuse and Recycling Association	
MacGillivray, John	City of Kirkland	
McCoy, John	State Representative, 38th District	
McLaughlin, Pat	King County Solid Waste	
Nielsen, Kevin	City of Marysville Public Works	
Phillips, Emily	Washington State Recycling Association	
Pon, Yolanda	King County Solid Waste	
Prosch, Dave	Chelan-Douglas Health District	
Schutt, Thad	Royal Organic Products	
Shanley, Kimberly	Waste Management	
Shanley, Kimberly	Waste Management (late)	Appendix Only
Silvestri, Ted	Yakima Health District	

Snyder, Jody	Waste Connections
Starry, Art	Thurston County Environmental Health
Stenson, Brent	Washington State Environmental Health Directors
Thomas, Tamara	Terre-Source
Turner, Stewart	Consultant Agronomist, West Richland
Wheeler, Edward	Lenz Earthworks
White, Marlene	Citizen, Toppenish
Whitefoot, Jan	Citizen, Harrah
Williams, Daryl	Tulalip Tribes

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Stenson, Washington State Environmental Health Directors, 115
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Turner, Consultant, West Richland (Public Testimony), 15, 32, 72, 75, 81, 92, 94
Wheeler, Lenz Earthworks, 26, 34, 43, 57, 60, 64, 68, 74, 80, 84, 129, 139
White, Citizen, Toppenish (Public Testimony), 54, 82, 83, 93, 95, 133
Whitefoot, Citizen, Harrah (Public Testimony), 13, 72, 73, 74, 75, 92, 94, 95, 99
Williams, Tulalip Tribes, 14, 54, 55, 56, 133

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Appendix A: Copies of all written comments

Dorsey, Kyle (ECY)

From: David Bader [daveatehs@aol.com]
Sent: Friday, November 02, 2012 4:14 PM
To: Dorsey, Kyle (ECY)
Subject: Comments on Proposed WAC 173-350 Amendments

Follow Up Flag: Follow up
Flag Status: Flagged

Washington State Department of Ecology
Mr. Kyle Dorsey
Waste 2 Resources Program
Via: kyle.dorsey@ecy .wa.gov
RE: WAC 173-350 Proposed Revisions

Kyle,

Thank you for the opportunity to comment on the proposed revisions to WAC 173-350. The following comments reflect a continuation of concern(s) presented in my letter of March 28, 2012 to Kathleen Scanlan during the informal comment period for these proposed rule changes and additions.

The issue of concern is the ability for an existing or new anaerobic digester, operating under the conditions expressed within Substitute Senate Bill 5797 and resultant RCW 70.95.330, to obtain a permit to operate from the local Health Department, (if they choose to do so), without being subject to regulation or design requirement in excess of that / those specified within the statute.

With the passage of SHB 5727 the Washington State legislators set certain standards for new and existing anaerobic digesters to be exempt from the requirement to obtain a solid waste handling permit. Among those is the requirement to meet design and operating standards of NRCS code 366 in effect at the time of adoption. According to my file, this is believed to be the September 2003 version for code 366. Additionally, storage structures is/are to comply with the NRCS code 313 effective as of the date of adoption (believed to be December 2004) <u>or</u> "certified to be effective by a representative of the natural resources conservation service" or meet applicable construction industry standards...

Following what I believe to be the pathway for permitting for existing or new exempt facilities, the newly proposed section WAC 1473-350-250(4)(E)(iii)(A) uses a NRCS Code 366 effective October 2010 or other effective date specification for digester design criteria. (iii)B requires surface impoundments and tank design standards to meet WAC 173-350-330(3) or other design approved by the health department and the department (not NRCS review and approval).

Ponds, section (vii)(A), requires the use of Technical Guide 313 revised June 2011 or a described specified liner criteria. Subsection (C) of this section allows for the Jurisdictional Health Department to approve alternative design. However the proposed design must be demonstrated to function "at least as effectively" as the most current NRCS design criteria noted above.

From a practical standpoint, and potentially a technical standpoint as well, it is likely not feasible to demonstrate equal effectiveness / protection assurances for structures built under previous standards when compared with new design standards. Therefore, a reasonable pathway to permitting does not appear to exist.

I request that the proposed rules be revised to allow for otherwise exempt facilities seeking to obtain a permit to meet NRCS standards applicable at the time of SHB 5797 adoption or the review and approval process discussed within 5797.

Following this same line of discussion, applicable date of design standards identified within Table 250-A for Terms and Conditions for Exemption should be addressed accordingly.

Also, when considering the permitting pathway for otherwise exempt digesters, please consider if the requirements specified within WAC 173-350-030, Effective dates are applicable and if they might come into play.

Other Elements of Concern:

Definitions

New definition for "On-Farm"

"On-farm" means activities taking place on any agricultural land under the control of the same entity including parcels that are not geographically contiguous but managed by the same entity for agricultural production.

Lands identified within a farm management plan for digestate application may not be technically managed for agricultural production by the same entity. I do not have a recommendation for revision.

Substitute Senate Bill 5797 allows for "Organic waste-derived material" to be placed within permit exempt digesters. The Bill specifies "Organic waste-derived material" has the same meaning as defined in RCW 15.54.270 and any other organic wastes approved by the department, …

RCW 15.54.270 Definition:

(24) "Organic waste-derived material" means grass clippings, leaves, weeds, bark, plantings, prunings, and other vegetative wastes, uncontaminated wood waste from logging and milling operations, food wastes, food processing wastes, and materials derived from these wastes through composting. "Organic waste-derived material" does not include products that include biosolids.

This definition should be included within the proposed regulations and "Organic waste-derived material" should be included as acceptable feedstocks within Table 250-A (page 42)

Please feel free to call or e-mail with any questions you may have.

Thank you for your consideration.
Dave

David L. Bader R.S.
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(360) 739-3703

Dorsey, Kyle (ECY)

From: Janusz Bajsarowicz [januszb@pacifictopsoils.com]
Sent: Monday, October 29, 2012 3:05 PM
To: Dorsey, Kyle (ECY)
Cc: 'Seth Kaulfuss'
Subject: RE: Solid Waste Handling Standards Rule

Follow Up Flag: Follow up
Flag Status: Flagged

Great –to clarify a little – we primarily use what can be called "land-clearing debris" which consists of un-processed, non-dimensional, woody material (tree trunks, large branches, stumps, etc) as a bulking agent.

From: Dorsey, Kyle (ECY) [mailto:kdor461@ECY.WA.GOV]
Sent: Monday, October 29, 2012 10:39 AM
To: Janusz Bajsarowicz
Subject: RE: Solid Waste Handling Standards Rule

Janusz, I am acknowledging receipt of your comment. We will look at your questions with others after the close of the comment period. Thanks for taking time to respond.

From: Janusz Bajsarowicz [mailto:januszb@pacifictopsoils.com]
Sent: Monday, October 29, 2012 10:28 AM
To: Dorsey, Kyle (ECY)
Cc: 'Seth Kaulfuss'
Subject: Solid Waste Handling Standards Rule

Hello Kyle – I have a comment regarding the definition of Bulking agent vs Wood waste:

"Bulking agent" means an ingredient used to improve structure and porosity, or to lower moisture content, primarily in composting. Bulking agents improve convective air flow and reduce settling and compaction. Bulking agents may include, but are not limited to, clean wood waste, straw, and other high-carbon materials.

"Wood waste" means solid waste consisting of wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, construction, demolition, handling and storage of raw materials, trees and stumps. This includes, but is not limited to, sawdust, chips, shavings, bark, pulp, hogged fuel, and log sort yard waste, but does not include wood pieces or particles containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol, or copper chrome-arsenate.

Our company uses "clean wood waste" in the composting process as a bulking agent. This material is generated mainly by landscapers and from various construction projects. I wanted to make sure there is a clear difference between the use of raw, un-manufactured wood such as stumps and trees, versus the wood waste definition (mentioning "trees and stumps"). During the presentation, Dawn mentioned that a plan will need to be in place to reject feedstocks with >5% contamination. We know that the wood we use as bulking agent is not "wood-

waste", but trees and stumps that come from a construction company or any type of "construction project" could be categorized as "wood waste" the way I currently read these two definitions.

Thanks,

Janusz Bajsarowicz
Pacific Topsoils, Inc.
(425) 337-2700 office
(425) 514-3499 fax

Dorsey, Kyle (ECY)

From: Janusz Bajsarowicz [januszb@pacifictopsoils.com]
Sent: Friday, November 02, 2012 4:00 PM
To: Dorsey, Kyle (ECY)
Cc: 'Seth Kaulfuss'
Subject: WAC 173-350 Comment: Bulking Agents/Wood Waste

Follow Up Flag: Follow up
Flag Status: Flagged

Hello Kyle,
As currently written, the definition of bulking agents includes clean wood wastes:

"Bulking agent" means an ingredient used to improve structure and porosity, or to lower moisture content, primarily in composting. Bulking agents improve convective air flow and reduce settling and compaction. Bulking agents may include, but are not limited to, clean wood waste, straw, and other high-carbon materials.

Although wood wastes have always been defined as part of Type 1 feedstocks, we are concerned with the use of dimensional (processed woods) used in compost. It is very difficult to insure only unprocessed (chemical and bonding agent free) wood is used as part of the feedstock. We accept both the clean dimensional wood waste and wood waste used as wood derived fuel, although neither is used in our composting process. Much of this material is hard to distinguish, and will inadvertently make its way into the feedstock. A clear definition of "clean" (which we assume means only untreated, dimensional cuttings) and a procedure to insure only the "clean" materials are used will be important.

Janusz Bajsarowicz
Pacific Topsoils, Inc.
(425) 337-2700 office
(425) 514-3499 fax

Sent via email: Kyle.Dorsey@ecy.wa.gov

November 1, 2012

Department of Ecology
Attn: Kyle Dorsey
P.O. Box 47600
Olympia, WA 98504

Subject: Draft rule revision to WAC 173-350

Dear Mr. Dorsey:

Cedar Grove Composting appreciates the Department of Ecology's request for comments on the draft rule revision to WAC 173-350. As the largest composter in Washington, Cedar Grove is proud of our accomplishments in diverting organic waste away from landfills and reducing greenhouse gas pollution while manufacturing quality and sustainable soil solutions. We have followed Ecology's proposed rule-making and have communicated our comments and concerns throughout the process.

Cedar Grove supports Ecology's efforts to institute consistent regulations on the composting industry across the state. We agree with many of the environmental parameters embedded in this rule-making. Cedar Grove, however, asserts that the Draft Rule published by the Department on October 3, 2012 has a significant economic impact on the industry which is not captured by the Department's cost-benefit analysis, is advancing rulemaking before critical scientific studies are complete and erroneously extends the regulation of composting to the regulation of finished compost material. A summary of our comments is listed below, and are expanded upon in the attached "Response Comments to Department of Ecology." The appended comments provide detail on the following issues:

- New Definitions of Compost Incur Significant Costs on the Industry
- Rulemaking is Advancing before Scientific Discovery
- Regulation of Finished Compost Expands Authority, and "Requirement to Sell Product" Ignores Market Realities
- Cost-Benefit Analysis is Fatally Flawed

In addition to these comments, Cedar Grove expresses strong concern about the redundant regulations created by this rule. While we recognize the Department would like to have compost rules that regulate

 7343 E. Marginal Way So. • Seattle, WA 98108 • (206) 832-3000 • Fax (206) 832-3030

all aspects of a facility, most facilities already operate under very specific permits issued by several agencies for various aspects of their operations.

The composting industry is under economic pressure from many avenues, and redundant regulations should be removed from this rule making. For example, stormwater plans under Department of Ecology Stormwater Division should be sufficient for dealing with stormwater and additional plans should not be necessary. Air quality permits under existing air agencies should be sufficient for dealing with odor and dust emissions. Construction records should not have to be provided and approved by the jurisdictional health department if those construction activities were permitted by another agency. Any permits that exist at composting facilities that deal directly with an environmental concern should have primacy over the requirement for additional plans in the composting facility management standards. If facilities do not have these additional permits, then plans for these aspects should be required. Any existing water or air permit should be sufficient in controlling environmental harm.

Facilities, like Cedar Grove Composting, operate under multiple jurisdictions which regulate air, stormwater and health. The following are examples of current regulatory oversight:

Air permits for example have requirements for:

1) Facility wide inspections for odors
2) Facility wide inspections for dust
3) Composting process controls
4) Leachate control and use
5) Odor complaints including complaint response program
6) Air pollution control device performance and testing
7) Biofilter review audited by independent third party twice per year

Emission of air contaminant standards: (detriment to person or property i.e. PSCAA 9.11)

Nuisance odors, if they become an issue, are already regulated by local air authorities which include odors from finish compost piles as well as every other part of a compost facility operation.

Stormwater permits also have a wide range of requirements:

1) Leachate and stormwater drainage system
2) Inventory of materials
3) Stormwater pollution and prevention team
4) Preventative maintenance
5) Spill prevention and emergency cleanup plan
6) Employee training
7) Inspections and recordkeeping
8) Structural source control best management practices
9) Treatment best management practices
10) Erosion and sediment control best management practices

11) Stormwater peak runoff rate and volume control best management practices
12) Stormwater sampling plan

These are only a few examples where multiple agencies requesting the same type of plan, but not necessarily approve the same methodology for environmental control, can cause a facility to be out of compliance with one permit due to conflicting requirements. The only way to resolve the issue is to eliminate proposed requirements that would require duplicate plans or permits when they are already in place. The Clean Air Act or Clean Water Act agencies should have primacy over these areas.

Finally, it seems odd that while the Department is attempting to increase regulatory requirements for existing facilities, it is at the same time looking at increasing volumes allowed at exempt facilities. At these exempt facilities, there will be no oversight for this material and no permitting process where communities can comment on expanded operations. This does not seem to be in the best interest of human health and the environment.

Cedar Grove appreciates Ecology's interest in our comments. In our opinion, the Draft Rule needs to be re-evaluated. In its current form, it will institute redundant regulations on most existing composters which will increase costs significantly without providing additional environmental benefits. The cost-benefit analysis is fatally flawed and provides an inaccurate economic analysis of Ecology's rulemaking.

Please contact me at 206-832-3000 if further clarification is required.

Sincerely,

Jerry Bartlett

Chief Environmental and Sustainability Officer

Issues of Concern

Regarding Department of Ecology's Proposed WAC 173-350 Solid Waste Handling Standards Amendments

www.cgcompost.com

Background

Washington State Department of Ecology has released its Draft Rules to revise the composting sections of WAC 173-350 regarding solid waste handling. The agency is soliciting public comments until November 2, 2012.

Cedar Grove Composting Perspective

Cedar Grove Composting is the state's largest composter, accounting for approximately 40% of the statewide diversion of organic materials from landfills to recycled organics products. Cedar Grove is in agreement with many of the provisions of the draft rules. This policy paper focuses on issues which Cedar Grove believes will significantly harm the organics recycling industry. Issues are summarized here with expanded analysis on the pages following.

New Definitions of Compost Incur Significant Costs on the Industry

- Ecology rulemaking introduces more stringent parameters for finished compost which are not supported by science, will increase the cost of compost operations and are not accounted for in the agency's cost-benefit analysis.

Rulemaking is Advancing before Scientific Discovery

- Ecology is pursuing rulemaking despite on-going toxic and odor studies which have been designed to provide guidance to the rulemaking process.

Regulation of Finished Compost Expands Authority, and "Requirement to Sell Product" Ignores Market Realities

- It has been settled policy that once a product is recycled, it is no longer considered a solid waste and therefore not subject to solid waste regulation. This rule change would continue to regulate finished compost, a recycled commodity.
- Ecology's limit on product storage interferes with market realities and will potentially incur significant reductions in sales revenues for the composting industry.
- Product screening requirements would reduce markets that require larger, more porous materials for specific environmental applications
- New definitions will significantly limit growing markets for compost use in low impact development construction, filtration and storm water management

Cost-Benefit Analysis is Fatally Flawed

- The Cost-Benefit and Least Burdensome Alternative Analysis failed to incorporate the equipment, labor and operational costs associated with the rule. This omission is a fatal flaw in the analysis, ignoring a 60-fold increase in the costs attributable to this rule.

New Definitions of Compost Incur Significant Costs on the Industry

Ecology rulemaking introduces more stringent parameters for finished compost which are not supported by science, will increase the cost of compost operations and are not accounted for in the agency's cost-benefit analysis.

Not supported by science. Ecology's proposed definitions add rocks, plastics, textiles, rubber and leather to its list of "contaminants" without altering the "less than 1% by weight" limit. In the specific case of rocks, a small amount of dense rocks may cause a compost pile to fail the 1% weight limit of physical contaminants. Ecology has not demonstrated a human-health or environmental threat from rocks in finished compost.

Ecology's proposed definitions also restrict the amount of film plastics in finished compost to 0.1% by weight. Ecology refers to the environmental concerns associated with film plastics,

> "...physical contamination from compost...gradually rises to the surface and enters surface waters, creating risk to terrestrial and aquatic species."[1]

Ecology, however, provides no scientific analysis to quantify this risk. The 1/1000th weight limit for film plastic is arbitrary and will incur significant costs on the composting industry. According to recent waste characterization data from the City of Seattle, film plastics in incoming feedstock streams are 6 times higher than this limit in the commercial sector and 11 times higher than this limit in multifamily organic streams. The processing required to reduce these contaminants to Ecology's proposed regulatory limit is significant, but it has not been accounted for in the rulemaking's cost-benefit analysis.[2]

The agency acknowledges the increased cost,

> "This could result in...increased average prices of compost, due to the additional screening required..."[3]

Yet the agency concluded that it, "...could not at this time confidently quantify the cost of finer screening of compost material[4]," so it ignored these new expenses in its cost benefit analysis. Cedar Grove estimates that the incremental cost of additional screening exceeds $1/ton of processed materials[5]. According to same methodology used in the cost-benefit analysis, this would add an $18.9 million cost to composters. As a point of reference, the entire benefit for the rule is estimated to be $698,117.

Suggested amendments

- Delete "rocks" from list of Physical Contaminants.
- Eliminate film plastic limit. It is already included in the 1% limit for Physical Contaminants.

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[1] Page 39, Preliminary Cost-Benefit and Least Burdensome Alternative Analyses, WA DOE, September 2012

[2] "Ecology believes facilities can comply with this new requirement through...additional screening of compost." (Page 23, ibid)

[3] Page 54, ibid

[4] Page 23, ibid

[5] Costs include equipment (trommels, screens, air knife, CEC screen, rock belt and plastic separator), labor, operations and maintenance costs required to meet new compost definitions and standards.

Rulemaking is Advancing Before Scientific Discovery

Ecology rulemaking has been influenced by public concerns regarding odors and toxic emission impacts from composting facilities. Many of the proposed rule changes are designed to mitigate composting facilities' impacts on local communities.

During this rulemaking process, Ecology has initiated a toxics emissions study and has contributed to an odor emissions study which includes a large composting facility. Both of these studies are in process.

In responding to public concern about the specific issue of toxic emissions from composting facilities, Ecology concluded that the scientific analysis should precede any regulatory measures,

> "Ecology is currently pursuing a study to determine the best way of tracking and quantifying emissions. ***Until that is determined***, Ecology chose not to require emissions monitoring and its associated burden."[6] (emphasis added)

A similar conclusion is warranted for many of the regulatory measures regarding odors. Ecology has partnered with the Puget Sound Clean Air Agency to track and quantify odor emissions in the Marysville/North Everett community. This study is the most comprehensive in Washington State history to determine the odor emissions profile of a large composting plant.

Ecology seems to have reached this contradictory conclusion because of its interpretation of the intensity of community concerns regarding odors,

> "Despite attempts to limit nuisance odors under the existing rule language, odor complaints continue to increase."

As it relates to Cedar Grove Composting, this is not the case. Nuisance odor complaints have fallen 38% since 2010.[7]

Similar to its conclusion regarding toxic emissions, Ecology should give time for the scientific discovery process to produce data before finalizing regulatory changes.

Suggested actions

- Delay rulemaking until odor and toxic studies are complete and their conclusions can shape final rulemaking.
- Remove "capacity" references in rulemaking because composters already have capacity permits issued from air and health regulators.

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[6] Page 57, Ibid

[7] Twelve month total between February 2010 and January 2011 was 38% higher than the most recent twelve-month total at Cedar Grove facilities.

Regulation of Finished Compost Expands Authority, and the "Requirement to Sell Product" Ignores Market Realities

Ecology's rulemaking reaches beyond the regulatory framework for the processing of compost, and enters into regulating a commodity – finished compost. The proposed rule also mandates that all of the compost produced be sold within three years, by limiting the storage of the finished product.

The proposed rule dramatically expands the scope of regulation under RCW 70.95. For over forty years, citizens, local governments and solid waste facility operators have understood that this regulation has been limited to solid wastes, not recycled products. The law and the implementing regulations in WAC 173-350 were not intended to regulate the storage or handling of commercial products created by recycling. Until this proposal, they have never been extended to cover those commodities.

The exception to the Governor's Executive Order on Rulemaking gives no suggestion that the rule would cross such a significant policy threshold. We understand that the Department has been advised by the Assistant Attorney General that it has the legal authority to extend its jurisdiction under RCW 70.95 to include commercial products stored on the site where they are manufactured in a regulated recycling facility. Even if this legal interpretation is upheld, that does not mean that this is good or appropriate public policy. This expansion of regulatory authority would establish a significant precedent for Ecology to regulate commodities that was never intended or envisioned by the Washington Legislature. Such a significant policy change should not be buried in a relatively minor rulemaking process that is obscure to many of the potentially affected stakeholders.

The requirement to sell finished compost within certain time periods also ignores market realities. The evidence demonstrates that the sale of compost material is influenced by season, economy, and general market conditions. A restriction on storing finished product on-site could require facilities to close their doors to incoming materials from local governments, citizens and businesses, placing them in violation of contracts, and jeopardizing consumer participation in recycling efforts. This regulatory approach could result in the decline of composting activities in Washington State. It could result in materials being landfilled as an alternative means of achieving regulatory compliance. Using an environmental regulation to reach into the private marketplace and regulate commerce is a major public policy change. Ecology has failed to demonstrate any environmental benefit to justify this dramatic regulatory reach.

Additionally, the film plastic restriction may limit the marketability of organic recycling materials as much as 20% of current volumes going out, instead of achieving Ecology's intent to increase the market. One reason is that a significant portion of the market for finished compost requires material that is between ½ inch and 1 inch. This product is needed for more porous applications used for erosion control. The proposed rule would require all compost material to be processed through a ½ inch screen to reduce film plastic contamination. The unintended consequence of this rule would be to eliminate the erosion control market for finished compost. Additionally, specifications related to low impact construction projects, rain gardens, and storm water management that were developed over many years throughout the region would be in jeopardy with the new requirements.

Suggested amendments

- Delete all sections that extend regulatory authority to regulate finished compost or require the sale of this commodity within a certain time.
- Eliminate film plastic limit. It is already included in the 1% limit for Physical Contaminants.

Cost-Benefit Analysis is Fatally Flawed

In Executive Order 10-06, Governor Gregoire determined that both "small businesses and governments benefit from having a stable and predictable regulatory environment." She, therefore, set high standards for rulemaking for each Washington State agency. One such threshold was to require consultation with the small business community regarding any rulemaking that has a small business impact.

The Preliminary Cost-Benefit and Least Burdensome Alternative Analyses for the proposed composting rulemaking concludes that "there is reasonable likelihood that estimated benefits of the proposed rules amendments exceed their costs"[8]

The analysis concludes this because "the total quantifiable present-value costs of the proposed rule amendments are approximately $175,381 - $180,731" while the benefits near $700,000.

The first concern with this report is that there is an arithmetic error (highlighted cells) in the total 20-year cost. Below is a reproduction of the report's Table 1 which summarizes the costs of the rulemaking:

Composter Costs	**Low**	**High**
Update plans for group 4 composters	$2,293	$2,625
Supervisor training	$276,815	$276,815
Odor Plan	$22,258	$25,479
Closure Plan	$556	$637
Anaerobic Digester Costs	**Low**	**High**
Operating report	$11,720	$13,416
Closure plan	$146	$168
TOTAL 20-YEAR COSTS	**$175,381**	**$180,731**

A corrected Table 1 is produced below where the total 20-year costs are $313,788 - $319,140:

Composter Costs	**Low**	**High**
Update plans for group 4 composters	$2,293	$2,625
Supervisor training	$276,815	$276,815
Odor Plan	$22,258	$25,479
Closure Plan	$556	$637
Anaerobic Digester Costs	**Low**	**High**
Operating report	$11,720	$13,416
Closure plan	$146	$168
TOTAL 20-YEAR COSTS	**$313,788**	**$319,140**

[8] Page 54, Ibid

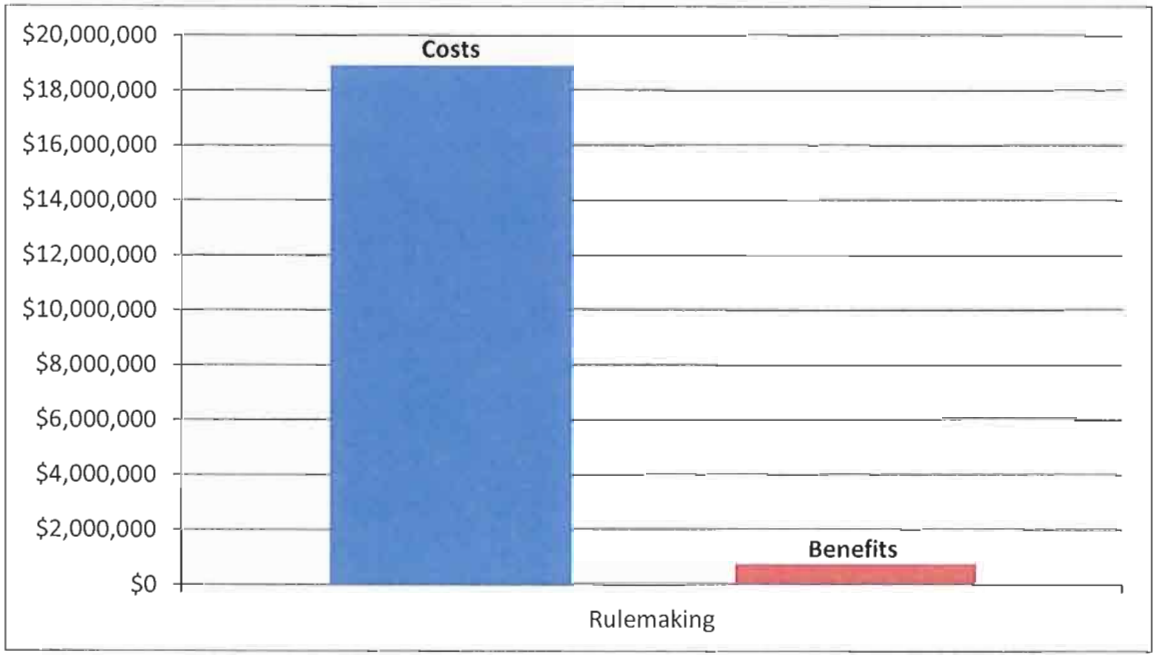
With the corrected information, the report's initial assessment of benefits exceeding costs still seems to hold true.

	Costs (Average)	Benefits
Composters	$303,739	$398,924
Anaerobic Digesters	$12,725	$299,193
Total	$316,464	$698,117

Unfortunately, the reports treatment of costs incurred by the regulation is inadequate. Although claiming to make "assumptions that would overestimate costs," the report ignores significant areas of new expenses mandated by the rulemaking.

In order to comply with the contamination restrictions currently embedded in the rule-making, Cedar Grove estimates that each facility would require screening equipment and labor in excess of $1 per processed ton. These costs include the screening equipment necessary to reduce film plastic contamination, including trommels, processing screens, air knives and plastic separators, as well as labor and fuel expenses. Over a 20-year period, this would add $18.9 million of costs onto the composting industry.

With the inclusion of these expenses, the costs of the rulemaking outpace the benefits by a factor of over 25 to 1.



The omission of these additional expenses is a fatal flaw to the cost-benefit analysis.

Suggested actions

- Revise the Cost-Benefit and Least Burdensome Alternative Analysis before further rulemaking. Comply with Governor Gregoire's Executive Order 10-06 and consult with small businesses on mitigation of costs associated with rulemaking.

Dorsey, Kyle (ECY)

From: Bary, Andrew I [bary@wsu.edu]
Sent: Friday, November 02, 2012 2:49 PM
To: Dorsey, Kyle (ECY)
Subject: comments

Follow Up Flag: Follow up
Flag Status: Flagged

Kyle,

Please keep the request for total N as part of the new requirements it is important in determining appropriate usage management, marketability and helps manage surface and ground waters in the state of Washington of the compost.

Training is required in the new rule does that mean all facility managers will need new training under the rule or will previous training be Ok if it can be documented?

Andy

New mailing address as of 1 March 2009
Andy Bary
Washington State University - Puyallup
2606 W Pioneer
Puyallup, WA 98371-4998
http://www.puyallup.wsu.edu/soilmgmt/
Office 253-445-4588
Fax 253-445-4569

Dorsey, Kyle (ECY)

From: Will Brinton [will.brinton@woodsend.org]
Sent: Thursday, November 15, 2012 1:36 PM
To: Dorsey, Kyle (ECY)
Subject: Compost Rules changes
Attachments: Plas-method Scale.pdf; Plas-meth-ORBIT06.pdf; Scanned_plastic_compost.gif; JFP-08-186.pdf; E-coli-survival-in-soilsz1.pdf; CSU-foreign_matter.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Kyle:

Our firm has been responsible for science of testing composts since the early 1980's and has had involvement in Washington State issues from time to time.

With regard to the rule changes proposed, I would like to comment as follows:

Under Definitions and **Testing Parameters for Compost (Table 220-B)**

The proposed physical contamination definition includes rocks and sets the threshold at "*less than 1% by weight total, not to exceed .10% film plastic".*

1) I strongly support this new limit of 0.1% film plastic even though I understand the compost industry is concerned about it. The relevancy is as follows;

- 0.1% of highly surface are material is a RELEVAMNT standard. See attached materials. The German Compost Association has set the plastic limit at < 800mm2 per lit, since the surface area is the active problem. This closely correlates to 0.1% by weight. The 800mm2 standard corresponds to 1.23 square inches per liter or in about 1 qt or 500g of compost. Such level exceeding this are highly objectionable visual contamination, that is, easily discernible.
- A presentation of this was heard at the USCC Compost Symposium in Florida around 2008 and I believe Americans have had plenty of time to prepare.
- I attach a presentation of the new scanning method that is being used in Europe. We have been able to reproduce this method for plastic contamination quite successfully.
- An image of a Woods End scan of GreenWaste compost that had plastic fragment is also attached. Composters we work with fund this highly relevant and work with it.

2) I urge you to adopt he practice of requiring fecal coliform testing in addition to salmonella in all finished composts. In other words Salmonella does not give an accurate picture particularly if non-sludge materials are involved. But fecal and E. coli do. The relevancy to cleanliness in the food chain is very apparent from the large volume of work being published on the topic. EPA has updated method that are concise and very accurate (EPA 1680 and method 1682). See attached published papers. One very recent papers now cites compost as one possible source of bacterial contamination.

In any of these matters I will be happy to answer further questions.

Sincerely yours,

KITSAP PUBLIC
HEALTH DISTRICT

RECEIVED
OCT 08 2012
ECOLOGY W2R

345 6th Street, Suite 300
Bremerton, WA 98337
360-337-5235

October 2, 2012

Mr. Kyle Dorsey
Washington State Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

RE: COMMENTS ON SOLID WASTE REGULATION CH. 173-350 WAC

Dear Mr. Dorsey:

The Kitsap Public Health District has reviewed the aforementioned proposed rule and offers the following comments. The page and paragraph of the pertinent language associated with our comments is identified for your convenience

1. **Page 21, Paragraph (c)(ii) (i)** Comply with the performance standards of WAC 173-350-040;
   (ii) **Protect surface water and groundwater through the use of best management practices and all known available and reasonable methods of prevention, control, and treatment as appropriate. This includes, but is not limited to, setbacks from wells, surface waters, property lines, roads, public access areas, and site-specific setbacks when appropriate.** Manage the operation to prevent the migration of agricultural pests identified by local horticultural pest and disease control boards, as applicable;
   (iii) Control nuisance odors to prevent migration beyond

   Add back in deleted language. Because the quantities of exempt composting are so substantial, it is important that these facilities maintain setbacks to surface water and wellhead protection zones for Group A and Group B wells.

2. **Page 21, Paragraph (c)(vi)(C&D)**

   Units for incoming feedstocks (C) and outgoing materials (D) should be the same so that JHA may accurately assess compliance with throughput quantities.

3. **Page 25, paragraph (i) Add feedstock storage areas to following paragraph.**

   (i) Composting facilities must manage any leachate generated at the facility by providing leachate management features. The leachate management features include, but are not limited to, leachate collection, conveyance, and storage structures, or treatment systems. Leachate must be collected from areas of feedstock **storage and** preparation, active composting, and curing, and be conveyed to a leachate storage structure or treatment system. Any discharges to ground that result in contaminants migrating to groundwater require a waste discharge permit under chapter 90.48 RCW, Water pollution control, prior to discharge. Discharges to ground that result in degradation of groundwater quality are prohibited under chapter 90.48 RCW,

Water pollution control. Any discharge to sanitary sewer requires additional permitting by the local delegated authority or department;

4. **Page 24. Add traffic patterns to paragraph (b)(ii)**

   (ii) Scale drawings of the facility including the location and size of feedstock and composted material storage areas, compost processing areas, fixed equipment, buildings, storm water management features where applicable, access roads, **traffic patterns**, and other constructed areas and buildings integral to facility operation;

5. **Page 29, Paragraph (C) Off pad storage of finished compost should be required to meet general performance standards under Section 040.**

The Kitsap Public Health District appreciates the opportunity to provide comment on the revisions to WAC 173-350. Should you have any questions or require additional clarification of any comment, please do not hesitate to contact me at 360-337-5672.

Sincerely,

Jan Brower R.S.
SHW Program Manager
Kitsap Public Health District
Ph. (360) 337-5672
jan.brower@kitsappublichealth.org

Kitsap County Department of Public Works

614 Division Street (MS-27), Port Orchard, WA 98366-4699 *R.W. Casteel, P.E., Director*

November 2, 2012

Kyle Dorsey
Washington State Department of Ecology
Waste 2 Resources Program
PO Box 47600
Olympia, WA 98504

Dear Mr. Dorsey,

In recent weeks, local processors have expressed concern to my staff regarding the proposed revisions to 173-350 WAC. In some instances, these companies believe that the proposed changes will have crippling consequences. This concerns Kitsap County greatly, as we have worked diligently over the past several years to make organics diversion a priority, consistent with the state solid and hazardous waste management plan.

Since the publication of the State's solid and hazardous waste management plan (Beyond Waste Plan), Kitsap County and local service providers have implemented a series of programs, designed to divert residential and commercial organics from the waste stream, including, but not limited to:

- residential yard and food waste curbside collection,
- commercial organics collection,
- a comprehensive education and outreach program that promotes composting, and
- a school organics recycling program (Food to Flowers).

Both of the facilities that manage the material in Kitsap County are small, family-run businesses. We rely on these facilities to process our material safely and effectively, and we believe they have been relatively successful meeting our expectations.

Our fear is that undue costs put on these facilities may force them out of business or increase costs to a point where our programs are unsustainable. This would put Kitsap County in a very uncomfortable position – likely discontinuing our established programs, and forcing the material we have worked so hard to divert, back to landfill disposal.

At a time when demand for finished compost is down and compost facilities are struggling to stay afloat in the current regulatory framework, it may not be the time to put more analytical testing and consultant costs on these facilities. We encourage the Department to continue working with the industry, and to come to a solution that will support the continued success of existing programs.

Thank you for your time and consideration. If you have any questions or would like to speak in more depth about what these revisions might mean to Kitsap County, please contact Kitsap County's Recycling Coordinator, Chris Piercy at 360-337-4898 or cpiercy@co.kitsap.wa.us.

Sincerely,

Patricia Campbell

Patricia Campbell
Senior Program Manager
Solid Waste Division

The Open Line 360-337-5777 or 800-825-4940 • FAX 360-337-4867
—printed on recycled paper—

NORTHWEST BIOSOLIDS MANAGEMENT ASSOCIATION
201 So. Jackson St., KSC-NR-0512, Seattle, WA 98104-3855 USA; Phone: (206) 684-1145; Fax: (206) 263-3485

September 25, 2012

Kyle Dorsey
Waste 2 Resources Program
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Dear Mr. Dorsey:

The Northwest Biosolids Management Association (NBMA) would like to take this opportunity to comment on the proposed revisions for the Solid Waste Handling Standards (Chapter 173-350 WAC) in Washington State. The NBMA represents close to 200 public municipalities, sewer districts, and private companies, most of which are located or have worked with biosolids in Washington State. Biosolids facilities have been regulated under Ecology's Biosolids Program (Chapter 173-308 WAC) since its establishment in 1998. The NBMA also participated in the Biosolids Rule Revision Advisory Group (BRRAG) when the rule went through a revision in 2007.

Specific Comment

WAC 173-308-060 (2) Biosolids not classified as solid waste. Ecology's Biosolids Management rule clearly denotes that biosolids are not to be considered solid waste and are therefore not subject to regulation under solid waste laws. The proposed Solid Waste Handling revision would be inconsistent with the State's biosolids management rule.

The NBMA is seeking clarification on the need for additional regulations on biosolids. Why is there a need for additional, more stringent biosolids compost regulation and oversight? There are quality standards for the beneficial reuse of biosolids and biosolids products (compost) in WAC 173-308-160, Biosolids Pollutant Limits. Is there evidence that shows an environmental or public health threat from the creation, management or use of biosolids compost in Washington State that indicates the existing standards are not adequate? If operating standards for biosolids composters are necessary to minimize odors etc, those operating standards could be incorporated into WAC 173-308 or a permit issued to the biosolids composter from Ecology.

If you have any questions or would like additional information on the NBMA comments to this draft rule revision please call Daniel C. Thompson co-chair of our Regulations Committee at 253 502-2191.

Advancing environmental sustainability through beneficial use of biosolids
1202M

Sincerely,

Tim Cooper, President
Northwest Biosolids Management Association

P.O. Box 3011 Pasco WA 99302
(360) 556-3926
Fax: (509) 783-4674
www.compostwashington.org

November 1, 2012
Kyle Dorsey
Department of Ecology
P.O. Box 47600
Olympia, WA 98504

Re: Department of Ecology's Proposed WAC 173-350 Solid Waste Handling Standards Amendments

Dear Mr. Dorsey:

The Washington Organic Recycling Council (WORC) is a nonprofit corporation representing the organic waste recycling industry in Washington State and is comprised of 50 private composting facilities, support industries and public agencies. The Council provides a unified statewide voice on many issues vital to the organics recycling industry, sponsors the nationally recognized Operator Training & Certification Programs and promotes the use and benefits of valuable soil amendment end products for end markets ranging from land application to gardening to stormwater management and erosion control compost applications. Washington State's 49% recycling rate is largely due to the diversion of organic solid waste materials to composting rather than landfill disposal.

Goals and Timing of the Rule Amendments

WORC has been involved with this rulemaking process, which has substantial impacts on our membership, since early 2011 when DOE decided to proceed with rulemaking related to composting under WAC 173-350-220 despite there being a moratorium placed on rulemaking pertaining to all of WAC 173-350. We were concerned at the time that although WAC 173-350-220 along with other solid waste rules could use some updating (particularly for anaerobic digestion technologies and topsoil management) focusing only on the composting part of the rule could cause more confusion (*see attached 4/8/11 letter*). Unfortunately, this has turned out to be the case with most of the current rulemaking process, particularly in regard to the blurring of the distinction of when compost is and is not a solid waste, a critical issue for maintaining a viable composting industry in Washington State. It also seems contradictory for DOE to be proceeding with this rule amendment and adoption by the end of this year when 1) the agency is continuing with its odor/toxic air emissions studies at composting facilities around the state and 2) a major public/privately sponsored odor monitoring study is underway in the Everett area. Both of these studies should provide some guidance as far as odor sources and best odor management practices at composting operations.

WORC's major issues with the present rulemaking effort pertain to

- unclear and counterproductive definitions
- additional analytical requirements, many of which are market driven and not related to human health or environmental impacts
- the designation of composted material as a solid waste on site
- the lack of clarity regarding the designation of compost off-site as being in the regulated realm or outside of solid waste regulation
- the uncertain review and approval process for Operations Plans
- the double regulation of biosolids composting under WAC 173-308 and 350
- needed revision of the rule amendment cost-benefit analysis

Specific Comments: Definitions (173-350-100)

1) **Capacity-** "*means the maximum amount of material that can be contained. Capacity is identified by the conditions of exemption, the permit or the plan of operations as approved by the jurisdictional health department. All material includes, but is not limited to, incoming waste, feedstock, stockpiled wastes, active composting, curing piles, composted materials and sorted recyclable materials on-site.*

This new definition is extremely problematic and counterproductive to the goals of good composting site environmental management as well as local and State recycling goals. It includes clean wood waste used as a bulking agent for aerobic composting and odor control. Why would a regulator want to limit the amount of clean wood or land clearing debris imported to the facility for these necessary operations?

It also includes composted material that has been tested and approved as passing all of the required compost quality tests for a finished compost product. The inclusion of this finished product left on site now under a definition of "capacity" means that it is still considered a solid waste. Does DOE have evidence that bags of finished compost or piles awaiting bagging or final sale contribute to odor or toxic air emissions? Where is the evidence to support this assumption? This regulation of final product, which should be outside of the regulatory solid waste realm, has negative implications even for permit exempt facilities which might have the timing of sales that do not neatly fit the new capacity definition or requirement for 50% of the final product to be sold in a certain period of time.

Additionally, compost improves with maturing time. Requiring 50% of the product from an exempt facility to be removed within 1 year could seriously limit the quality of the finished compost that facility could produce – which in turn may limit its sales and certain reduce that price that the product could bring.

Finally, it is totally unclear what the definition of "capacity" refers to – *"the maximum amount of material that can be contained"* where? We assume it pertains to within the boundaries of a permitted or unpermitted composting facility but could it also pertain to an institution or industrial facility that may have multiple anaerobic digestion unit tanks?

2) **Physical Contaminants** – *"as they relate to incoming feedstocks and compost quality means inorganic and organic constituents that are not readily decomposed during the composting process including but not limited to, plastics, glass, textiles, rubber, leather, metal, ceramics, rocks, polystyrene and wood pieces containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol or copper-chrome-arsenate.*

We are unaware of any human health or environmental hazard presented by "rocks" whether pertaining to incoming feedstocks or compost quality. "Rocks" should be removed from this definition.

3) **Yard Waste** – *"means plant material commonly created in the course of maintaining yards and gardens and through horticulture, gardening, landscaping or similar activities. Yard debris includes, but is not limited to, grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit and vegetable garden debris. Yard debris does not include sod (a combination of grass roots, soil, and rocks) or soil.*

Again we are unaware of any human health or environmental hazard presented by sod though large amounts of it may pose processing challenges that should be left to the facilities to address in their Operations Plans.

Specific Comments: Testing Parameters for Compost (Table 220-B)

Our members object to the inclusion of many new testing parameters that are purely market driven and have little relevance to human health and environmental concerns. These include electrical conductivity, C:N, moisture at 70 degrees C (*what does this mean?*) and organic matter. No acceptable range is given under Table 220-B Testing Parameters for these testing criteria so why include them at all?

The bigger problem comes with the substitute of the testing parameter "physical contaminants" for "% foreign matter". The original "% foreign matter" testing parameter had a threshold of less *than 1% by weight* without rocks being included in the definition of % foreign matter. The new physical contamination definition includes rocks and sets the threshold at "*less than 1% by weight total, not to exceed .10% film plastic".* First of all the new definition should not include rocks and second, there is no good testing protocol for determining the percentage of film plastic. This is also an aesthetic issue. A market probably exists for compost that might exceed this hard to measure parameter and it should not be relegated to landfill disposal if multiple screening fails to remove all film plastic. This would be counter to state and local jurisdiction recycling goals.

Finally, what are acceptable test methods for measuring "biological stability"? Stability actually is an important measurement for moving compost off-site but if Ecology is going to require stability testing, it should at least provide guidance on acceptable test methods.

Designation of Composted Materials or "When (if ever) is Compost Not a Solid Waste?" (WAC 173-350-220 (10)

This revision is extremely confusing and the original intent of the WAC here has been totally altered. The revision reads "*When used on-site or distributed on site, composted materials*

meeting the testing parameters of Table 220-B are no longer subject to this chapter. Composted materials that do not meet these requirements are subject to management under chapter 70.95 RCW, Solid waste management-reduction and recycling".

We urge DOE to revise this language back to its original intent so that "*composted material meeting the testing parameters of Table 220-B* *<u>are no longer considered a solid waste whether stored on-site or distributed off-site.</u>"* If this clarification is not made then who would buy compost for gardens, roadside applications or agricultural fields if potential liability exists from its being in contact with water and therefore a "leachate" generator for the property owner? Any product can readily become solid waste depending on how it is used, but finished compost should not be redefined as solid waste by implication. Doing so would be a substantial change in the intent of this WAC and plunge the organics recycling industry and all the jurisdictions that depend on it into legal uncertainty.

Likewise, the inclusion of finished compost in the regulatory realm of "solid waste" if kept on site, causes major concerns for our members who may have a long aging process for their compost prior to direct sale or bagging. They would now be obligated to collect all of the leachate from around finished compost piles meaning huge costs as far as installing or expanding leachate collection ponds, leachate treatment and the maintenance of these new systems.

There seems to be an assumption also, that composted material remaining on site after it has been tested can be a significant source of odors. If this is in fact one of the reasons for DOE desiring to continue to regulate composted material as a solid waste, then where is the scientific evidence behind this assumption?

Finally, all of the additional costs associated with the unnecessary and unsubstantiated classification of finished compost kept on site for either marketing related issues or economic conditions beyond the control of the composter in the regulatory realm of "solid waste" should be taken into consideration in the Cost-Benefit Analysis for these rule revisions. They clearly are not in the current analysis resulting in drastically underestimated costs of implementation of this regulation revision.

Progressive Odor Management Plans (WAC 173-350-220 (4) (f) (ii) (B)

The inclusion of a "Progressive Odor Management Plan" in facility Operations Plans sounds good on paper but will it really be worth the projected cost (which will vary greatly by facility) to provide the local health jurisdictions with a template for what will happen in response to odor nuisance complaints beyond the facility boundary? Unfortunately, it is very difficult for facility operators to anticipate all of the possible situations under which odor complaints might occur and a template might not be the best tool to follow in all cases. That money is much better spent invested in site improvements or maintenance activities (such as regular cleaning of leachate ponds), which might actually head off potential odor problems.

Need for Coordination Between Regulatory Agencies

The new requirements for more detailed sections of facility Operations Plans regarding odor management, community relations and stormwater management begs the question of how many agencies will actually need to review and approve various elements of the Plans. The jurisdictional Health departments approve these plans and issue the solid waste permits but they are not the regulators in the case of odor complaints, air quality or stormwater management issues.

Dual Regulation of Biosolids

Composting facilities that process both biosolids and the organic fraction of mixed solid waste (such as yard debris and food scraps) could potentially be subject to conflicting regulations under both WAC 173-350 and WAC 173-308. WAC 173-308-060 (2) states "Biosolids are not a solid waste and are not subject to regulation under solid waste laws". Biosolids composting, is not typically regulated by local Health jurisdictions. There are differences in the testing parameters and testing standards for a biosolids based compost versus one produced from only yard debris and food scraps. The biosolids quality standards in WAC-173-30 are based on extensive scientific risk assessment that protects public health and the environment. It does not make sense for a biosolids composting operation to be permitted by Ecology under WAC 173-308 and then also be regulated under WAC 173-350 by local health jurisdictions. We urge Ecology to clarify in the revised rule that biosolids composting and biosolids compost are not regulated as solid waste under WAC 173-350.

Preliminary Cost-Benefit and Least Burdensome Alternative Analysis

In addition, we urge that DOE revise the Preliminary Cost-Benefit Analysis which accompanies these rule revisions to cover missing cost elements which could include:

- additional leachate collection systems for the finished compost stored on site (since under this rule revision it is placed in the solid waste realm)
- multiple screenings of composted material to meet the new physical contamination threshold regarding film plastic
- potentially having to develop sort line operation for incoming feedstocks that might not meet the 5% threshold for contaminants

DOE under Table 1 of the Executive Summary estimated the cost impacts of the new rule amendments over 20 years for the "permitted composting facility grouping" to reach the range of $313,788 - $319,140 (*due to an arithmetic error DOE actually shows the range as $175,381 - $180, 731 which is not correct in the document*) . This, however, only includes the cost impacts of updating Operations Plans for permitted composters, supervisor training requirements and preparation of separate odor management plans. Preliminary industry estimates of the cost of these rules to permitted composting facilities over the next 20 years for just the additional compost product screening needs alone in order to meet the proposed new film plastic limitation is in the range of $18 million - $20 million. What will be the true cost estimate to permitted composting facilities when one includes the design and installation of new leachate ponds due to once finished compost being treated as solid waste or the cost of taking much more material to the landfill due to it failing the proposed new standard for "physical contamination"? Finally, what will be the cost estimate from the unnecessary dual

regulation of biosolids compost for the special grouping of composters who are planning to compost (or are already composting) biosolids and the organic fraction of MSW at their facilities?

In conclusion, DOE's preliminary cost impact analysis needs to be totally revised to accurately reflect the financial impact upon the organics processing industry in Washington State. The cost impacts of this rule revision should not be minimized or overlooked since the number of permitted composting facilities in the State has shrunk from 41 in 2007 to 33 in 2012.

Summary of Key Changes

Changes to this Rule to keep a viable composting industry:

1) Clarify the definition of "capacity" so that it is clear what it refers to in the case of a composting facility and anaerobic digestion facilities
2) Change the definition of "capacity" so that it does not include materials imported to the site to help with odor control (such as woodwaste) and finished compost product
3) Delete all sections that extend regulatory authority to finished compost on site or require the sale of this commodity within a certain time period.
4) Clarify that a final product that passes all compost quality tests is no longer a solid waste whether kept on site or moved off site
5) Revise the definition for "physical contaminants" so that it does not include "rocks" but rather only harmful elements in finished compost.
6) Revise Table 220B for "Physical Contaminants" so that it only requires the 1 % limit without the additional caveat "of which less than .1% is film plastic".
7) Remove the dual regulation requirements for biosolids compost quality and facilities that happen to take both biosolids and other organic waste.

Substantial changes are needed to the present draft of the WAC 173-350 Amendments. We strongly urge that the DOE substantially revise these rule amendments and re-issue another version which will not have such a negative impact on the state's composting industry for at least one more round of public and stakeholder comment.

Sincerely,

Dan Corum, President
Washington Organic Recycling Council

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Fax: (509) 783-4674
www.compostwashington.org

April 8, 2011

Washington Department of Ecology
Attn: Kathleen Scanlan
P.O. Box 47600
Olympia, WA 98504-7600

Dear Ms. Scanlan:

The Washington Organic Recycling Council (WORC) is a nonprofit corporation formed in response to demands for increased recycling of organic materials. The Council provides a unified statewide voice on many issues vital to the organics recycling industry: research, education (through WORC sponsored Operator Training & Certification Programs), product safety and standards, government regulations, environmental planning, trade, marketing, and public education and involvement.

Since 1991, WORC has been recognized as the statewide organization representing organic recyclers, and facilitates communication between the private and public sectors. The Council works closely with state and regional organizations, such as the Washington State Recycling Association and coordinates with other state composting organizations and the US Composting Council.

The council would like to submit comments on the current request for composting rule-making under WAC 173-350-220.

March 1, 2011 - Rule-making will continue: *The Director announced that Ecology will proceed with rule-making related to composting only in WAC 173-350, citing OFM exemption criteria 3 (e):*

3e - Beneficial to or requested or supported by the regulated entities, local governments or small businesses that it affects.

WORC does not believe that the basis for exempting the current rule revision process from the moratorium was generated by those in the regulated community as stipulated in the exemption. Although WAC 173-350-220 along with other solid waste rules could use some updating, focusing only on the composting part of the rule will cause more confusion. Other parts of the

WAC 173-350 standard are very closely related to what occurs in section 220. By taking a piece meal approach, the Department is not likely to get scientifically based final rules that will integrate well with other sections. In addition, we believe other parts of WAC 173-350 such as those pertaining to anaerobic digestion and topsoil management standards are more critical to address in the near term.

WORC requests the exemption for rule making for the composting section in isolation be withdrawn and that all rule making under WAC 173-350 be addressed at the same time.
If the Department elects to move forward with rule-making only for the composting section then WORC has several general issue areas and substantive comments on sections that should be revised and those which are working well and should not be revised.

General Issue Areas

1) **Clear Articulation of the Need for Rule Revision**: Any changes to WAC 173-350-220 should be based on documentation of problem areas with changes based on scientific information and not laboratory bench scale testing results or small-scale pilot projects.

2) **Developing a Scientific Basis for Odor Management:** The rulemaking should have an independently verified scientific foundation so that the regulated community can support the approach and outcome of odor management best management practice or standards related to compost and air quality testing. Once this foundation is developed then rulemaking items will be backed by agreed upon facts and not based upon preconceived ideas that may not be supported field research or scientific literature. By developing the science first, it will become obvious that some anticipated changes are in fact unnecessary and other elements currently being reviewed are missing critical elements.

3) **Odor Sink Effect:** An important aspect related to air quality emissions which may contribute to noxious odors is related to the odor sink effect where most of these facilities operate. Since composting facilities are generally in industrial zoned or agricultural areas, there are many other sources of emission that will not be regulated by this rule and their contribution to over emission potential will have an effect on a successful rule implementation.

4) **Emission Standards should have only one Enforcement Agency:** The current rules concerning emission standards have multiple agencies trying to address odor related issues (see WAC 173-350-040 (4)). We strongly recommend having this emission standard addressed and enforced by only one agency instead of multiple agencies that have conflicting standards or no scientifically enforceable standard at all.

5) **Performance Based Rules, Not Prescriptive:** The Council believes rules should be performance based and not prescriptive. The organic management area is a very fast growing and sensitive part of the current economy as the state wrestles with trying to meet greenhouse gas avoidance targets and removing more organic material from the

disposed waste stream. New technologies and approaches are needed to meet these evolving issues. Prescriptive rules tend to stifle innovation of newer technologies, whereas performance based rules can allow for innovation and improved environmental performance.

6) **Specific Guidance Needed on New Organic Waste Recovery Technologies:** The composting rule revision should be complemented by rule development for new organic waste recovery technologies and their various byproducts, particularly those which might end up being land applied or composted. An example is anaerobic digestion for organic materials as food and yard debris where the byproducts are both a biogas and a digestate for composting.

Sections of WAC-173-220 Where Revisions Would Be Beneficial

A. **Nuisance odors**, if addressed at all by this rule, should be based on a scientifically verifiable standard rather than just being complaint--driven with no consideration of duration, wind direction, dilution to threshold consideration. Other emission sources that may contribute to the intensity level are industries that are not regulated by this rule and will result in the composting community taking the hit for odors produced by other sources.

B. **Feedstock types** are all or nothing under the current rule. If you have a little of Type 3 in mostly Type 1 feedstock the entire mixture is regulated more stringently as Type 3. The feedstock types are somewhat arbitrary in the first place but are supposed to be based on a presumed difference in the level of risk to the environment and the public. A ‘de minimus” value of less than 10% of a higher management type material (as postconsumer food scraps) should not affect the management standard of a large quantity of yard debris.

Sections of WAC 173-350-220 Which are Working and Do Not Need Revision

A. Finished product testing should remain essentially the same with clarification on pathogen testing for either fecal coliform or salmonella-- not both. This was the original intention of the last rule change. Additional testing requirements for pesticides and weed seeds are extremely costly and will not improve the public health. It would only increase the cost of processing and this money could be better spent on other feedstock management items.

B. Finished Product Standards - once the feedstock is composted and meets the standard of finished product, it cannot revert back to a regulated waste unless the basic principle of discard or intended for discard is addressed. To allow material to go in and out of solid waste rules only confuses the issue and will be inconsistent with the legal requirements for something to be a solid waste it must be discarded. Clearly if the material is intended for discard then it meets the element for solid waste classification.

C. Requiring financial assurance for compost facilities could force many facilities to close and would certainly affect the number of new facilities to be built with another economic disincentive. The way this financial element is calculated is very important. If a finished product is perceived to have no value it would require disposal as a solid waste. This would turn an asset worth $15 per yard to a liability that would cost $100 per ton for disposal under a financial assurance plan. This plan would then have to be backed by a letter of credit which would substantially reduce the ability of a facility to capitalize construction of other needed infrastructure such as a higher level of odor management.

   In addition, it is unclear what has changed in the Department's view to now consider requiring financial assurance for composting operations. If the Department anticipates that the new rule changes will impact the composting community so significantly that it will force more facilities into closures then it would seem appropriate to address whether fewer composting facilities is in fact a desirable outcome.

D. Exemptions to the rule - we believe these exemptions should remain as currently written. They were very thoroughly discussed and thought through in the last rule adoption.

Finally, this rule would need to have a small business economic analysis performed to determine if the industry could afford the economic impact of any proposed revisions. Thank you for the opportunity to comment on proposed rulemaking. Please contact me if you have further questions about the comments.

Sincerely,

Dan Corum, President
WA Organic Recycling Council

Dorsey, Kyle (ECY)

From: Dan Corum [Dan.Corum@Zoo.org]
Sent: Wednesday, October 31, 2012 8:11 AM
To: Dorsey, Kyle (ECY)
Subject: Comment Submission from Woodland Park Zoo
Attachments: WPZoo Comment DOE.docx

Dear Kyle Dorsey:

Please find the attached letter to be submitted as written comments to the proposed changes to Chapter 173-350 WAC from the Woodland Park Zoo.

Please send an acknowledgement that you have received these comments.

Sincerely,

Dan Corum | WOODLAND PARK ZOO
Compost/ Recycling Coordinator A.K.A. "Dr. Doo"
601 N. 59th Street Seattle Washington USA 98103
Office 206 548-2633 | Poop Hotline 206 625 POOP

Woodland Park Zoo saves animals and their habitats through conservation leadership and engaging experiences, inspiring people to learn, care and act.

March 21, 2013 (Ecology Note: File contains an automatically updating date field, but was received with an e-mail on October 31, 2012.

Mr. Kyle Dorsey
Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Dear. Mr. Kyle Dorsey,

I am submitting comments to the Department of Ecology regarding the proposed amendments to Chapter 173-350 WA pertaining to composting.

The Woodland Park Zoo is nonprofit organization currently composting herbivore manure and bedding materials as part of our commitment to waste reduction, resource conservation and public education. The zoo's composting facility operates under a conditional solid waste permit exemption producing less than 1000 cubic yards of compost annually. Our program successfully sells all of our compost annually, typically within 6 months of production during our spring and fall sale events.

I am concerned about redefining the term "capacity" as inclusive of both finished compost and all other materials on site including but not limited to curing piles, active composting, feedstocks, and bulking agents (WAC 173-350-100). Presently it is possible to produce and sell less than 1000 cubic yards of compost annually but to periodically have more than 1000 cubic yards of material on site before the beginning of each six month sale. The proposed definition of "capacity" would force a reduction of materials on site either through reducing volumes of feedstocks and producing less compost or finding new sales markets. Either option would result in increased costs. Reducing our feedstock would result in tipping fees for disposal and loss of income. Compost is typically sold seasonally in the spring and fall when compost is best applied. Costs would be incurred in locating and securing new markets to purchase finished product during the off seasons.

Not only would the change result in economic harm to our organization but the ecological advantages are unclear. If feedstocks are transported and disposed elsewhere then the carbon footprint for those materials will increase. If product is sold out of season it would likely still be stockpiled until the spring or the fall but off site without the benefits of monitoring and storm water protection.

I strongly encourage the Department of Ecology to remove "finished compost" from the list of materials included in the definition of "capacity" or to consider other options such as raising the capacity level to match the volume of feedsocks needed to produce both 1000 cubic yards of compost and 1000 cubic yards of finished compost. Doing so would support the Woodland Park Zoo's efforts to be both economically and ecologically sustainable.

Sincerely,

Daniel H. Corum

Dan Corum
Compost/Recycling Coordinator
Woodland Park Zoo

City of Seattle
Seattle Public Utilities

November 2, 2012

Kyle Dorsey
Department of Ecology
P.O. Box 47600
Olympia, WA 98504

Re: WAC 173-350 Solid Waste Handling Standard Amendments – Composting, Vermicomposting and Anaerobic Digestion

Dear Mr. Dorsey:

Seattle Public Utilities supports the Department of Ecology's general environmental and sustainability goals for this rule revision which focuses on composting facilities and develops new regulatory sections for permit exempt and permitted anaerobic digesters. Our ability to reach our recycling goals is dependent upon having a thriving composting and organic waste processing industry that is capable of receiving and processing our residential and commercial yard, food waste and manufactured organics with minimal impacts on human health and the environment. This industry is also expected to produce high quality compost end products that can be utilized for gardening, landscaping, storm water management and agricultural end markets. We intend to support these private industry efforts by working with our residential, commercial and transfer station customers to minimize contamination in yard/foodwaste containers and self-haul loads. We also will continue to promote the expansion of compost end markets through public agency procurement and requirements for the use of compost in our landscape maintenance and stormwater codes.

The proposed rule amendment language, however, does not fully achieve DOE's stated goals and could use clarifying revisions. Our questions and comments focus on:

- Definitions
- Testing Parameters
- Designation of Composted Materials
- Operations Plan Review

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Specific Comments and Questions

Definitions (WAC 173-350-100)

1) **Capacity** – means *"the maximum amount of material that can be contained. Capacity is identified by the conditions of exemption, the permit or the plan of operations as approved by the jurisdictional health department. All material includes, but is not limited to, incoming waste, feedstock, stockpiled wastes, active composting, curing piles, composted materials and sorted recyclable materials on-site."*
   This definition should be amended to read "the maximum amount of material that can be contained *on site at any one time as measured in tons or cubic yards* ". More clarity is also needed as to the applicability of the term "capacity". Is it meant to apply only to a standalone composting or anaerobic digestion facilities, or also to apply to an industrial property which may have one or more anaerobic digestion tanks associated with different activities taking place on the property?

   - ***Composted Material*** – The "capacity" definition includes finished product which has undergone compost quality testing and is awaiting bagging or bulk sale distribution. We would expect that the limit for the maximum amount of material on site would allow for situations where some product inventory may need to be stored longer than normal due to economic downturns or delays with specific project applications.

   - ***Clean Wood*** - Why would clean wood waste delivered to a composter for use as bulking agent, an important function to maintain aerobic composting and possibly even odor control, be counted under facility capacity? Facilities should not be discouraged from having an ample supply of bulking agent on site to mix with spring/early summer grass. Also, wood waste delivered to the composting site, might be used to serve other end market such as mulch or chipped boiler fuel. Composters should not have their ability to serve these different end markets be constrained due to a limitation on overall site "capacity" when such a limitation does not currently apply to wood waste processors who may be classified as "permit exempt" under WAC 173-350-210 Recycling.

2) **Manufactured Organics** – means *"source separated solid wastes, such as non-plastic coated paper plates, cups, compostable bags, and other items designed to decompose through composting, anaerobic digestion or through other organic materials recycling processes. Manufactured organics do not include physical contaminants such as plastics and coated paper products that will not readily decompose under typical composting conditions, or wood derived fuel or wood waste as defined in this section."*

We recommend the term "source separated *materials*" be used rather than "source separated solid wastes" in reference to the non-plastic coated paper plates, cups, compostable bags and other items.

3) **Physical Contaminants** – as they relate to incoming feedstocks and compost quality means *" inorganic and organic constituents that are not readily decomposed during the composting process including, but not limited to, plastics, glass, textiles, rubber, leather, metal, ceramics, rocks, polystyrene and wood pieces containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol or copper-chrome-arsenate."*
We are unaware of any human health or environmental issues associated with small rocks in compost and recommend that "*rocks*" be deleted from the definition. If the intention of DOE is to address inerts here that would be an aesthetic concern. Possibly a naturally occurring "inert" classification could be created to include rocks, sand and gravel, none of which are "physical contaminants". However, the untested "*fines*" from construction and demolition debris processing, might be classified as a physical contaminant since it could cause the compost product to fail the metal thresholds set for a marketable final compost product. That is a human health and environmental concern.

4) **Throughput** – means *"the amount of feedstocks in tons or cubic yards that a solid waste facility processes in a given amount of time, such as a calendar year. Throughput is identified by the conditions of exemption, the permit, or the plan of operations as approved by the jurisdictional health department or the department".*
This definition could be further clarified to mean "the amount of incoming feedstocks in tons or cubic yards that a solid waste facility processes in a given amount of time, such as daily, monthly or in a calendar year".

5) **Yard Debris** – means "*plant material commonly created in the course of maintaining yards and gardens and through horticulture, gardening, landscaping or similar activities. Yard debris includes, but is not limited to grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit and vegetable garden debris. Yard debris does not include sod (a combination of grass roots, soil and rocks) or soil."*
This definition was amended to exclude sod and soil. Since keeping small amounts of sod and soil totally out of incoming yard debris material is probably impossible it should be amended to read "Yard debris does not include *large amounts* of sod or soil."

6) **Organic Conversion Technologies** – WAC 173-350-225 "Other Organic Material Handling Activities" refer to "other conversion technologies" without there being a definition under WAC 173-350-100. A general definition should be developed such as an exemption for "other conversion technologies managing

up to 3,000 gallons of liquid or semi-solid organic feedstocks on site at any one time listed under Table 225-A."

Composting Facilities (173-350-220)

Table 220-B Testing Parameters

1) Many of the new testing parameters listed, such as total nitrogen, C:N ratio, moisture at 70 degrees C (we are unclear what this refers to), % organic matter and electrical conductivity have no acceptable range given and should not be part of testing requirements pertaining to human health and environmental impact concerns. Composters will test for these parameters in order to meet particular end market specifications.

2) **Physical Contaminants** – this test replaces the testing for "% of foreign matter" which had a threshold of "less than 1% by weight total". The new test for physical contaminants sets a limit of "*less than 1% by weight total, not to exceed .10 % film plastic*". What is the standard testing methodology for this new test? If there is none, particularly for measuring the film plastics, then we urge that the original *"less than 1% by weight total"* be kept without the reference to the "*less than .10% film plastic*" and the inclusion of "*rocks*" in the definition of physical contaminants.

3) **Biological Stability** – what test method should be used to determine if a compost is mature? This is an important indicator of when a composted material is ready to be used off site and so some guidance as to the test method should be given.

4) What happens to composted material that fails one of the testing parameters such as the physical contamination test which really does not relate to human health concerns but more environmental concerns (placement of the contaminated material next to waterways)? Repeated screenings might fail to produce a composted material for the .1% film plastic threshold requirement. If that is the case, does that material have to be landfilled or can it be used in some restricted land application? DOE should give some guidance regarding "composted material" that remain in the solid waste category due to failing one non-human health related criteria.

Designation of Composted Materials (Permit Requirements) under WAC 173-350-220 (10)

This revised section reads "*when used on-site or distributed on site, composted materials meeting the testing parameters of Table 220-B are no longer subject to this*

chapter. Composted materials that do not meet these requirements are subject to management under Chapter 70.95 RCW, Solid waste management- reduction and recycling".
The original WAC 173-350-220 (10) section which this amends made it very clear that composted material meeting the testing parameters of Table 220-B shall no longer be considered a solid waste and shall no longer be subject to this chapter. We strongly recommend that the wording of this amended section be revised to incorporate the original intent and read, "*When used on-site or distributed off-site, composted material meeting the testing parameters of Table 220-B are no longer subject to this Chapter* ***and therefore no longer considered a solid waste.***" If this is not clarified then there could be potential liability associated with the use of compost in any application ranging from gardening to erosion control, even if correctly applied due to the continued need for leachate and stormwater management required by the use of a material which is still classified as a "solid waste". We do not believe that DOE has this intention.

Operations Plan Review Question
Which regulatory agencies will review and approve the "progressive odor management plan" proposed to be required in the facility Operations Plans – only the jurisdictional health departments or both the health departments and regional air authorities? Will DOE provide health departments with some guidance on what is expected to be covered in these plans?

Thank you very much for the opportunity to comment on these proposed amendments to WAC Chapter 173-350.

Sincerely,

Timothy Croll, Director
Solid Waste Division
Seattle Public Utilities

November 2, 2012

Kyle Dorsey
Department of Ecology
P.O. Box 47600
Olympia, WA 98504
Re: Proposed WAC 173-350 Solid Waste Handling Standards Amendments

Dear Mr. Dorsey:

Barr-Tech LLC is a fully permitted compost facility located at 9117 Kallenberger Rd. N., Sprague, WA 99032, in southeastern Lincoln County (approximately 25 miles southwest of Spokane). Currently we accept yard debris from the City and County of Spokane as well as biosolids from several waste water treatment works in eastern Washington and northern Idaho. We are currently permitted under Chapter 173-350 WAC for all organic wastes (type 1 through type 4) and Chapter 173-308 WAC for biosolids.

After careful review of the proposed amendments to Chapter 173-350 WAC Barr-Tech would like to submit the following comments and questions for clarification:

Definitions

"Bulking agent" – includes "clean wood waste" but there is no definition for "clean wood waste" only for wood waste. What constitutes "clean wood waste"? Could "wood waste" as defined be considered a bulking agent? Bulking agents don't appear to be counted as part of the new "capacity" definition.

"Capacity" – Needs to be defined in "tons or cubic yards" to be consistent with the "throughput" definition. Capacity doesn't appear to include stockpiled bulking agents.

"Feedstocks" – Are bulking agents, as defined, considered feedstocks?

"Physical contaminants" include rocks, how are rocks defined. Is sand or gravel considered a rock? Why are rocks included? Rocks should be excluded from this definition.

Section 173-350-220 Composting facilities (1) Composting facilities – Applicability

Section (a) talks of "… *all facilities or sites*…" can the department include a definition that explains the difference between a site and a facility and then write the rule as it pertains to each? Can there be more than one facility on a site, or can there be more than one site on a facility or are they one in the same?

Section (a); this section is very confusing. There seems to be a circular reference. It states that …"*This section does not apply to: … (v) Composting biosolids when permitted under chapter 173-308 WAC* … then section (B) states that the permit must "*meet or exceed the requirements of this chapter…*" so a permit must apply the rule before the rule does not apply. Are biosolids included or excluded from this rule? Once biosolids are mixed with solid waste, are they regulated as a solid waste or are they regulated as biosolids?

It appears if you compost both solid waste and biosolids there could be a dual permit requirement? Was that the intent? When conflicting requirements exist which one is followed?

Section (b); talks of "*material on-site at any one time*" *includes feedstocks, active composting curing piles and composted materials…*" It doesn't list "*bulking agents*" but does include "*bulking agent*" in Table 220 - A. Would this include "wood waste" ground for other purposes, not intended for composting?

Table 220-A

Under sections (3) (b) and (3) (c) (i) it sites section (3) (a) (i), there is no section (3) (a) (i).

Section (c) (vi) (E) incorrectly sites "table 220-A" it is "Table 220-B" that lists the analysis required.

Section (3) Composting facilities - Design Standards (permit requirements)

Section (3) (f) states: "*Incoming feedstocks, active composting, and curing materials must be placed on pads that prevent contamination of soil or groundwater underlying or adjacent to the pads…"*

What is the definition of "curing"? Feedstocks and composting are defined but curing isn't. Why is curing included here? What does cured or uncured have to do with potential groundwater contamination? Recommend striking "curing" from this section.

Section (4) Composting Facilities – Operating standards (permit requirements)

Section (4) (a) (x) (B) states;

"Testing frequency is based on amount of composted material produced. A representative sample must be tested for every 5,000 cubic yards produced or every three hundred sixty-five days, whichever is more frequent…."

Comment: As a biosolids composter Barr-Tech would like to see some compatibility and continuity in the two composting regulations. In the Chapter 173-308 WAC, Biosolids rule once a month is the most frequent testing requirement for even the very largest facilities. In order to create some compatibility between the two composting rules we would suggest this read; …*"every 5,000 cubic yards produced or every three hundred sixty-five days but not more than every thirty days, whichever is more frequent….*

Table 220 – B

Split Table 220-B into health and safety parameters (metals and pathogen) and product quality parameters and only require meeting pollutant metals limits to store material off pad. Meeting pathogen reduction PFRP time and temp regimen for off pad storage should be sufficient and final pathogen testing when the product is prepared for sale or shipment off site. Requiring product quality and pathogen testing for off-pad storage would not be representative of product likely sold and shipped months after the material was moved off-pad. Testing for those parameters would be more appropriate at a time closer to the point of sale and/or shipment.

Where did the ≤ .10 percent film plastic limit come from and how is it tested or determined? This should be dropped from the rule.

Section (10) Composting facilities – Designation of composted materials (permit requirements)

Comment: If the composted material doesn't meet the Table 220-B "physical contaminants" or initial pathogen limits, there should be other options for reprocessing the material. The designation of composted material as a solid waste would not be appropriate.

In conclusion Barr-Tech was hoping that the new 173-350 WAC Amendments would create more, not less, compatibility and continuity between the two composting regulations, however we believe it is less clear with the Amendments as written. We feel that there needs to be some major revisions to what is proposed and we would strongly urge the Department to reconsider the Amendment and take into consideration the changes and comments we have submitted. We would urge the Department to postpone the final rule adoption, revise the rule and give the industry another opportunity to comment.

Respectfully,

J. Scott Deatherage
J. Scott Deatherage, Operations Manager
Barr-Tech LLC

Robert Dressel / Owner
North Mason Fiber Company
P.O. Box 275
Belfair, WA 98528

October 27, 2012

Mr. Kyle Dorsey
Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Dear Mr. Dorsey:

I have reviewed the recent version of the revised WAC 173-350-220 for composting and am very concerned by some of the elements of these revisions. North Mason Fiber Company is a small family-owned and operated business that recycles various organic materials through composting. We provide living wages for half-dozen people in a small town strongly hit by the recession. We support hauling and transportation jobs in this area. We provide an environmentally positive destination and use for waste products from the fishing industry in Washington state. We responsibly recycle materials from that industry that previously had been dumped in Puget Sound and without us would need to be landfilled. We process and produce environmentally beneficial products from the storm debris generated in 3 counties. And we provide a safe and responsible processing option for overrun from composting facilities in Western Washington.

Our facility is unique in its location, size, and infrastructure for processing these organic materials on 30-acres of largely an 18-inch thick structural pavement section, on a rail line, permitted to accept 80,000 tons per year of organics.

Brad Jones of Gordon, Thomas, Honeywell, with 24-years of experience in the solids waste industry in Washington state has told us that our contribution to the recycling capacity of this region is critical and it would be "catastrophic" to the recycling and waste handling capability of the region should we shut down. Yet this is precisely what this second iteration of revised regulations appears intent on causing.

We expended money and time last spring reviewing, communicating and responding to that version of proposed regulation. Rather than feeling heard from that process, this version of regulation revision appears to have sprung completely anew. Different sections have been revised and different concepts and definitions incorporated. We did not ask for this regulatory revision. Although the existing WAC 173-350-220 is not perfect, it is preferable to the current revisions. Because the rest of the WAC is under a moratorium on rule revision, but this section has been pushed through, we can only wonder where the motivation originates. It appears Department of Ecology is intent upon making work for themselves to justify their existence at our expense. Our business has also been impacted by the economic conditions and we resent and can no longer afford these trivial expenditures and diversions from the work of our business.

My main objections to this revision surround 3 areas:

1. Finished compost regulation,
2. Additional analytical requirements,
3. Additional required Odor-related plans.

Finished compost regulation:

- 173-350-100 Definitions-Capacity. Including "All materials" including "composted materials" and bulking agents (per Dawn Marie-Maurer/Ecology) within a limited capacity of a site is counter productive to effective composting. Ecology should be encouraging large volumes of woody bulking materials on site at all times because of their critical role in minimizing odors, soaking up moisture, and biofiltration of odorous processes and materials.

- 173-350-220(10) Additionally, finished compost must continue to be considered "not a solid waste" as in the current regulations. Compost improves water quality, reduces erosion, increases infiltration, etc. If finished compost is not considered "not a solid waste" any water or liquid contacting compost will be, by definition, leachate – including roadsides, gardens, lawns, agricultural fields.

- 173-350-220(4)(g)(ii) My compost ages for 2- to 3-years [because of the particular feedstocks] to prepare the highly mature, high quality bagged compost that I market. If I have to collect leachate around all my finished compost piles (which means installing compost berms, pumping leachate, installing another tank, moving the berms whenever the piles are added to or otherwise managed), the cost of equipment fuel alone could make composting not viable for me. If you are quite sure finished compost is a threat to human health and the environment so that you must regulate it, please a) show me your data indicating that fact, and b) address the specific problems where they occur rather than forcing my facility to jump through expensive hoops with no environmental benefit.

- 173-350-220(4)(g)(iii) Again, my primary compost must age for 2- to 3-years to create my high quality certified organic compost products. If this material becomes excessively wet, the process stops and the material is worthless. I cannot sell it. Therefore, I static compact and carefully shape my piles of 'finished' compost which effectively reduces infiltration of water through the high rainfall seasons that these piles must experience. This clause requiring specific porosity and moisture content of finished compost applies basic compost 101 rules of thumb to experience-based, PhD level compost production business. If this is imposed, I am out of business.

Analytical requirements:

- 173-350-220(4) Table 220B: These required analyses have been inflated from the current requirements as well as the concept behind screening for 'manufactured inerts' has been changed. We have 2 issues with this table:

  ◊ The new parameters with no ranges, EC, C:N, "moisture at 70ºC"[nonsensical], and organic matter are not health and environment parameters. These are market parameters that need to be left to our markets. We will test or not test these parameters based on the needs of our customers. They should not be included in environmental regulations.

  ◊ Physical contaminants – this is also a marketing parameter, but worse, this parameter is associated with a strict limit. If my customers don't mind large pieces of wood or rock or even plastic, Department of Ecology should not mandate that my product be landfilled. We meet specifications that my customers require for their use. WSDOT has strict limits on film plastics that we will meet for them. Requiring any compost that does not meet the limit for "rocks", "organic constituents that are not readily decomposed" [could include wood], etc. be landfilled (essentially the fate) is not reasonable, not needed, and not responsible.

Added Odor Plans (Especially "Progressive Odor Management Plan"):

- 173-350-220(4)(f)(ii)(B) My final major objection is the whole section adding multiple new sections and requirements to my Operations Plan. The Progressive Odor Management Plan, in particular, is not only excessive, it is counterproductive. This plan requires a list of "facility and operational improvements that could be made if nuisance odors are identified…". This provides the JHD with an easy little checklist to make a facility adhere to in the case of odor. However, it is more likely than not that the odor that actually occurs could have nothing to do with the planned and imagined odors that those 'improvements' were intended to address. Having to jump through hoops that may not have anything to do with a given odor will distract attention from identifying and resolving the actual odor issue, and will cost money un-necessarily and ineffectively.

- This is a huge waste of money for me if I have to have my Operations Plan re-written and my permit revised to accommodate that within 12-months just to satisfy these revisions. It won't change anything in my operation or make anything easier or more streamlined or more responsible or add any value to my compost products, customers or neighbors. This is just paperwork that Ecology has thought up that is going to cost money without benefit.

In closing, the economic impacts of this regulation revision are too high and will be paid predominately by the industry (facilities that remain, that is), but with no benefit to them. This industry is providing the capacity for State and municipal recycling goals. The Cost Benefit Analysis that was performed for this regulation revision seriously underestimates the impact of these changes on my business – especially the impact of the finished compost handling requirements.

In the preamble of that analysis there were 4 reasons given for revising this regulation. One purports to "Maintain strong environmental and human-health standards while expanding organics recycling". I can pretty much guarantee the industry will not be "expanding organics recycling" under these rules. On the contrary, these revisions are quite likely to reduce the industry. My 80,000 ton per year permitted capacity, for instance, will be eliminated.

Another reason given was to "Respond to business and public concerns regarding compost products". Because Ecology's expertise and mandate are environmental, not business or market-oriented, unintended consequences are a strong likelihood. I humbly submit that after doing this for over 10-years, I and other composters who are in business processing and marketing these organic products are much better suited to accomplish this goal without additional market and aesthetic regulation by Ecology.

While the current regulation is not perfect, it is far preferable to these revisions. Please correct these revisions or drop them entirely in support of recycling.

Sincerely,

Robert Dressel, Owner
North Mason Fiber Company

Dorsey, Kyle (ECY)

From: durfeycc@gmail.com on behalf of Chelsea Cisca Durfey [chelsea@naturalselectionfarms.com]
Sent: Tuesday, September 25, 2012 2:40 PM
To: Dorsey, Kyle (ECY)
Subject: Proposed Rule Making

Dear Mr. Dorsey!

Congratulations on finishing the big project! From my first read, I definitely notice the improved clarity. This is very helpful for me because I detest ambiguity.

I have one clarification question.
From my understanding of the previous regulation, testing frequency was dependent upon throughput of specific *Types* of feedstocks, so I'll admit this question may be carryover from that frame of thinking. What is the relationship between the feedstocks below? I.e. *which* is a category of *which?*

- Food processing waste (...material that is generated by a food processing facility...)
- Industrial solid waste (...waste generated from ...food processing...)
- Preconsumer animal-based waste (...collected from food processing facilities...)
- Preconsumer vegetative waste (...collected from food processing facilities ...)

My assumption is that both preconsumer wastes are food processing wastes, but are all three industrial solid wastes?

I apologize for being such a nerd. If its easier, you can just give me call instead of having to write!
Thanks Kyle! Hope all is well!

Chelsea Durfey

PS...the link below is positive news about NSF and Bisolids!
http://www.tri-cityherald.com/2012/09/25/2113456/kennewick-transforming-leftover.html

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Chelsea Cisca Durfey
509.830.0846
Natural Selection Farms, Inc.
Lighthouse Farms, LLC
NaturalSelectionFarms.Com

Dorsey, Kyle (ECY)

From: durfeycc@gmail.com on behalf of Chelsea Cisca Durfey [chelsea@naturalselectionfarms.com]
Sent: Friday, November 02, 2012 4:44 PM
To: Dorsey, Kyle (ECY)
Subject: Official Comment: WAC 173-350

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Dorsey,

We are requesting that Ecology either defines the term "rock," or removes it from the definition of physical contaminants.

We are requesting this action because there is no size/scale specification inherent to standard definitions of "rock." Thus "rocks" cannot be screened out. This vague approach could lead to problems/confusion in the future.

Thank you very much for your attention to this detail.

Chelsea Durfey, Natural Selection Farms, Inc.

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Chelsea Cisca Durfey
cell: 509-830-0846
office: 509-837-3501
Natural Selection Farms, Inc.
Lighthouse Farms, LLC
NaturalSelectionFarms.Com

Dorsey, Kyle (ECY)

From: Aran Enger [aenger@shd.snohomish.wa.gov]
Sent: Thursday, November 01, 2012 4:38 PM
To: Dorsey, Kyle (ECY)
Cc: Gary Hanada; Maurer, Dawn (ECY)
Subject: Snohomish Health Districts comments to WAC 173-350-220 rule revision

Follow Up Flag: Follow up
Flag Status: Completed

Comments to the Proposed Rule Revision of WAC 173-350-220 Composting Facilities:

It appears that the intention of the rule is to allow composters to design and operate "organic" facilities; however as a regulator we need to have the ability to measure the effectiveness of the design and/or operation. It's is our belief that the following comments will enhance our ability to enforce the rule.

- Conditionally exempt facilities should be required to submit an operational plan describing their compost operation. From our experience exempt composters use the exemption to accept regulated solid waste and are unable to effectively compost the waste. The operation plan would demonstrate composting knowledge and would make our evaluation process more efficient.

- (3) Design standards (a) – the rule requires that the facilities be designed and constructed in a way that it doesn't violate performance standards. The applicant is required to design a facility that controls odors from migrating beyond property boundaries. The design should take into account porosity, nutrient balance, pile oxygen, pile moisture, pile temperature and retention time. However the rule doesn't give a range of acceptable parameters to measure the effectiveness of the design and/or operation, therefore how do we evaluate if the facility is designed and /or operating properly.

- (4) Operating standards (a) (x) – the rule requires that composted material be analyzed for the parameters outlined in Table 220-B. It appears that the parameters that are intended to measure odor potential have no limits and/or range (i.e. porosity). Suggestion, create odor measuring parameters with acceptable ranges (i.e. C:N ratio, moisture, pH, porosity, temperature, etc) that can be used as an evaluation tool for determining if a facility is controlling odors. This tool would be of use when reviewing the progressive odor management plan and the plan required in (f) (ii).

Please don't hesitate to contact me and or Gary Hanada (425-339-5250) if you have any questions or need clarification about our comments.

Aran Enger, REHS | Environmental Health Specialist | Environmental Health Division
3020 Rucker Avenue, Ste 104 | Everett, WA 98201 | **425.339.8780**

SNOHOMISH HEALTH DISTRICT
WWW.SNOHD.ORG

Public Health: Always working for a safer & healthier Snohomish County

WASHINGTON STATE UNIVERSITY

Facilities Operations

To: Kyle Dorsey
Washington State Department of Ecology
PO Box 47600
Olympia WA 98504-7600

Rick Finch
WSU Facilities Operations, Waste Management
PO Box641101
Pullman WA 99164-1101

Date: 11/07/12

RE Proposed Amendments to Chapter 173-350WAC Solid Waste Handling Standards

I have reviewed the proposed changes to Chapter 173-350 WAC Solid Waste Handling Standards. I agree with the intent of the changes in terms of expanding exemptions and the requirements for exempt facilities. I also think the changes to how feedstock's and facility types are defined provide some clarity and make the regulations more understandable.

I have specific comments in two areas

1) Page 33 (B) &(C) sections referring to the development of a progressive odor management plan. It is unclear if the requirements for these plans will be more significant than the plans many permitted facilities like WSU's Compost Facility already have in our plan of operation. Section (C) discusses "*A description of facility maintenance activities that encompass nuisance odor prevention and control, such as acquiring critical odor control back up equipment in the event of breakdown."* In the preliminary Cost -Benefit and Least burdensome Alternative Analysis document section 3.3.6.2 . Ecology projected the cost of this rule to be a onetime cost of $337 to $386 in administrative time to write the plan. The analysis does not even consider the cost of implementation and the cost of equipment redundancy. Depending on the technology and the size of the facility these costs could run from $10,000 to hundreds of thousands of dollars for each facility.

2) Physical Contaminants as they relate to incoming feedstocks. In section 173-350-100 definitions. This definition is applied on Page 34 of the amendatory section

(*C) "Procedures and criteria for ensuring that only the feedstocks described will be accepted. This includes a plan for rejecting feedstocks contaminated with greater that 5% physical contaminants by volume, or a plan to accept and separate contaminated loads from non-contaminated loads, and reduce physical contaminates to an acceptable level prior to composting.* "

I do not agree with the need for this section, because the following section; Section(*D)* requires *a; "Procedure to reduce physical contaminants in composted material to meet testing parameters in table 22-B. Grinding to reduce the size of physical contaminants does not meet the requirements for this section"*. This section covers the quality of composted material in terms of contaminants and makes (C) redundant. Material such as rock is an inert and has no negative affect on the compost process except that large rocks damage equipment so most composters monitor loads for large rock anyway. Small rock that passes through screens will show up in quality testing of end product and consumers will not continue to purchase material with significant amounts of small rock. The marketplace will take care of this, if it is an issue. Most plastics and similar contaminants have little effect on the compost process and are easily screened out at the end of the compost process, where they are difficult to separate prior to composting. This could add significant costs to operations and potential worker safety issues if manual sorting is required for post-consumer food wastes. This could potentially hamper the expansion of post-consumer food waste composting programs where contaminates are difficult to control in feedstocks.

The preliminary Cost -Benefit and Least burdensome Alternative Analysis document section 3.3.6.5 states*; Ecology does not believe this requirement creates costs separable from proposed rule sections requiring analysis and management of contamination, or limits on physical contamination.* "Section 3.3.5.7 which addresses the requirements for analysis and management of contamination, or limits on physical contamination, states; "*Ecology could not at this time confidently quantify the cost of finer screening"*.

For a moderate sized facility screening 20,000 cubic yards/year through a ¾" screen you could possibly expect to process 100 cubic yards/hour, in optimal conditions; it would take about 200 hours at a cost of approximately $120/Hr in operator and equipment time. Total cost - $24,000/Yr A reduction in screen size to a 5/8"screen would reduce efficiency by 20% to 30% to about 75 Yds/Hour. This would add 66.7 hours/year of screening time for an additional cost of $8004/Yr. In addition to those costs you would increase the amount of material in the overs, most of which would be organic non-contaminants that may need to be treated as a landfill waste stream because of the contaminants.

A final factor is that a rule that dictates screen size requirements may reduce the availability of composted material used for erosion control. WSDOT has specific requirements for compost for erosion control applications and finely screened materials will not meet those standards.

I believe a more thorough analysis of the costs and impacts needs to be done on these amendments before they are implemented. I found several other areas where I believe the cost impacts to compost facilities were understated significantly

Comments for Compost Rules, WAC 173-350 Solid Waste Handling Standards

Date: October 12, 2012

To: Kyle Dorsey, Department of Ecology

From: Brenda Harn, Chelan County Public Works

I understood that these updates for the rules were to improve the permitting and development of efficient compost facilities and operations, and due to the Governors order to hold any mandated requirements, there would be a reduced and more efficient standards. There appears to be increased requirements for plans. More plans cost more to develop. This is not conducive with the intent of the Governor's order to hold mandates that increase government costs.

A Construction Quality Assurance plan is beyond the Plan to build a facility. A compost facility should be built to the plan, which already is required to be engineered by a certified engineer of the state. This is already costly. The Health District is already charged with approving solid waste permits. This action should serve as the check for the construction assurance.

Also a Plan for the chain of custody is an unnecessary expenditure. Material should simply be able to be taken to the lab and an annual report sent to the Health District.

A progressive Odor Management Plan is excessive government paperwork that is expensive and time consuming. There already is an overly extensive report due to the state each year on the Air Quality for a compost facility. This report requires such far-reaching details such as the gallons per hour on each equipment, the particles emitted in fumes,,,,, that another Plan is another cost on an already over studied part of the project.

All additional studies, plans, reports and/or tests included in the proposal is an increase in beauracracy. Chelan County is not in support of increasing plans where they are not necessary.

REPUBLIC SERVICES

November 2, 2012

Washington State Department of Ecology
Kyle Dorsey
Waste 2 Resources Program
PO Box 47600
Olympia, WA 98504-7600

Dear Kyle,

As one of the State's largest waste and recycling companies Republic Services has taken a keen interest in the conversations currently surrounding the proposed rule changes to WAC 173-350. As a national leader in recycling, disposal and the collection of yard & food waste we hope that during your deliberations on the changes to the rule that you will take the following into consideration:

1) We have concerns about the expansion of the definition of "contaminants" to include rocks while leaving the upper limit of contaminants at 1% by weight. We share WSRA's concerns that this is an extensive requirement that seems unreasonable. Furthermore, there is no evidence to support that the presence of rocks in finished compost poses a risk to human health and the environment. Proposed revision: Remove rocks from the definition of physical contaminants.

2) The proposed rule adds a requirement that film plastic make up no more than 0.1% of finished compost, by weight. Once again we join WSRA in its support of the reduction of contamination in finished compost to the greatest extent possible, and we find it to be essential to effectively market compost. We believe the extra financial burden on our partner composters is unreasonable. Additional laboratory testing costs and processing costs could significantly reduce the competitive marketing of compost and drive down the demand for the more expensive product. Proposed Revision: Eliminate the 0.1% film plastic requirement. It is already included in the 1% total physical contamination threshold.

3) The additional costs of site design, operations, inspections and reporting changes is significant. Contrary to the economic impact analysis we feel these costs could be very significant and warrant further review. Our concern about these impacts is heightened as a result of the time for compliance and reporting on these changes has been cut in half. As a partner to Cedar Grove we have concerns about these additional costs and our limited ability to pass these costs through to end users. Proposed revision: A re-evaluation of these potential costs should

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occur and a more through cost benefit analysis should be conducted especially in light our the Departments desire to increase composting.

4) Rules that regulate how long yard waste, after it has been processed and turned into a marketable product, can remain on site goes against a long standing definition of solid waste. This expansion of the solid waste definition provides great concern to us as one of the largest recycling processors in the State. Although we do not typically keep finished products on site for extended periods of time we do see the problems that can be created with such a requirement. Proposed revision: Eliminate regulations governing the length of how long finished products may stay on site as this is outside the purview of the Department of Ecology.

Collection companies are working tirelessly throughout the State to reduce incoming contaminants and residual contaminants in finished compost in order to effectively market products and divert more and more waste from landfill disposal. We strongly encourage the Department to reconsider these proposed provisions in the rule, and reach a compromise that retains the integrity of the industry, but does not place an economic burden on a growing industry.

Thank you for the opportunity to comment, and we look forward to working toward a rule that will support the State's waste diversion goals and support healthy and effective recycling infrastructure.

Sincerely,

Mike Huycke
Area President
Republic Services
1600 127th Ave NE
Bellevue, WA 98005

Snohomish County
Public Works

Aaron Reardon
County Executive

3000 Rockefeller Ave., M/S 607
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(425) 388-3425
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November 1, 2012

Kyle Dorsey
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Proposed Rule Amendments, Chapter 173-350 WAC

Dear Mr. Dorsey:

Snohomish County Solid Waste Division supports the Department of Ecology's goals for this rule revision which focuses on composting facilities and anaerobic digesters. A robust and successful organics management system is important to Snohomish County for meeting our materials management and environmental goals and this includes ensuring that properly operating facilities are available to process collected organic materials and that there are markets and end uses for the resulting compost and mulch. Over 80,000 single family residences subscribe to curbside organics collection services in Snohomish County, and many others self-haul their yard debris to compost facilities. In addition, many businesses subscribe to organics collection services for yard debris and/or food waste and food contaminated paper.

We are working with solid waste collection companies that provide curbside collection of organics to minimize contamination and to help "close the loop" with organics by promoting the use and purchase of locally-made compost. We will also soon revisit all commercial accounts that have organics collection service to help them improve their practices and minimize contamination of their organics stream. The proposed rules are meant to improve the overall compost system and as such, it is important that the proposed rule changes be carefully considered to ensure they will have their intended results and not unintended consequences. In some cases, we believe further work is needed before the rules are finalized.

Specific Comments and Questions

Definitions (WAC 173-350-100)

1. **Physical Contaminants** – *as they relate to incoming feedstocks and compost quality means inorganic and organic constituents that are not readily decomposed during the composting process including, but not limited to plastics, glass, textiles, rubber, leather, metal, ceramics, rocks, polystyrene and wood pieces containing*

paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol or copper-chrome-arsenate.

We recommend that "*rocks*" be deleted from the definition. Rocks could mean anything from sand to small pebbles, etc. Rocks in compost do not create any human health or environmental risk. If compost has an unacceptable amount of rocks for a particular application, specifications and/or the market place can address that issue.

2. **Yard Debris** – means "*plant material commonly created in the course of maintaining yards and gardens and through horticulture, gardening, landscaping or similar activities. Yard debris includes, but is not limited to grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit and vegetable garden debris. Yard debris does not include sod (a combination of grass roots, soil and rocks) or soil.*

This definition was amended to exclude sod and soil. While it is common for yard waste collection programs to not accept sod, it is not clear to us if there is truly a problem with compost facilities processing sod for composting, if they have the right equipment. From a collection standpoint, our understanding is that sod was originally not included in yard debris curbside programs due to concerns about the weight of sod. Compost facilities might not accept sod if they don't have the right equipment, but is a rule restricting them from accepting sod necessary? Where should sod be delivered, and what are the benefits of it being delivered to a different type of facility for processing or disposal?

Composting Facilities (173-350-220)

Table 220-B Testing Parameters

1. **Physical Contaminants** – this test replaces the testing for "% of foreign matter" which had a threshold of "less than 1% by weight total". The new test for physical contaminants sets a limit of "*less than 1% by weight total, not to exceed .10 % film plastic*". We applaud the intent of this restriction, though we have concerns that it might be impractical, particularly concerning film plastic. What is the standard testing methodology for this new test? If there is none, particularly for measuring the film plastics, then we recommend that the original "less than 1% by weight total" be kept and that rocks should not be included in the definition of physical contaminants.

2. **Biological Stability** – what test method should be used to determine if a compost is mature? This is an important indicator of when a composted material is ready to be used off site and so some guidance as to the test method should be given.

We are concerned about what happens to a composted material that fails one of the testing parameters such as the physical contamination test which really does not relate to human health concerns but more environmental concerns for particular applications, such as placement of the contaminated material next to waterways or for use in storm water management. Repeated screenings might fail to produce a composted material for the .1% film plastic threshold requirement. If that is the case, there should still be certain applications and markets that could accept a product with 2% physical contaminants. It doesn't seem reasonable that such a material would remain in the solid waste category and have no beneficial application. DOE should reconsider this and should also give guidance regarding "composted material" that remain in the solid waste category.

Designation of Composted Materials (Permit Requirements) under WAC 173-350-220 (10)
This revised section reads "when used on-site or distributed on site, composted materials meeting the testing parameters of Table 220-B are no longer subject to this chapter. Composted materials that do not meet these requirements are subject to management under Chapter 70.95 RCW, Solid waste management- reduction and recycling".

The original section which this amends made it very clear that composted material meeting the testing parameters of Table 220-B shall no longer be considered a solid waste and shall no longer be subject to this chapter. We recommend that the wording of this section be revised to read "*When used on-site or distributed off-site, composted material meeting the testing parameters of Table 220-B are no longer subject to this Chapter* ***and therefore no longer considered a solid waste.*** There are quite a few potential issues if this is not clarified.

Cost-Benefit Analysis

DOE estimated that the cost impacts per permitted facility of these rule amendments over a 20-year time period could reach the range of $175,381 - $180,731. This analysis is significantly flawed, however, in that it does not include many costs that will be incurred to meet the new regulatory standards. These include in part the costs related to ensuring minimal contamination of incoming loads (by governments, collectors, facilities, etc.), additional sorting and screening, costs related to rejected loads and presumably the landfill disposal of those loads, and the costs of treating finished compost as "solid waste" rather than a product. The Preliminary Cost-Benefit and Least Burdensome Alternative Analysis should be revised to include these other potential costs.

To provide a sense of scale of effort, Snohomish County Solid Waste Division alone plans to spend $40,000 in 2013 to conduct outreach to commercial organics generators to help decrease contamination of incoming feedstocks. We provide this as an example of how costs will be incurred by others other than the compost facilities and to demonstrate that the proposed rules will be far more costly than documented in the preliminary analysis. Additional costs will be incurred by curbside collectors and others that utilize organics composting services, and the cost of finished compost may increase also. Increased costs are not necessarily inappropriate, but the cost benefit analysis should provide more accurate analysis.

Thank you for the opportunity to comment on the proposed amendments to WAC 173-350. We support your efforts and urge DOE to undertake further discussion with the composting industry and collection service providers regarding these issues before final rule adoption.

Sincerely,

Sego Jackson
Principal Planner

Tacoma
City of Tacoma
Public Works Department

November 2, 2012

Kyle Dorsey
Department of Ecology
P.O. Box 47600
Olympia, WA 98504

Re: WAC 173-350 Solid Waste Handling Standard Amendments – Composting, Vermicomposting and Anaerobic Digestion

Dear Mr. Dorsey:

On behalf of the City of Tacoma (City) Solid Waste Management (SWM), I would like to take this opportunity to comment on the proposed amendments to WAC Chapter 173-350 which focuses on composting facilities and developing new regulatory sections for permit exempt and permitted anaerobic digesters. The City serves nearly 200,000 residents. Our municipal solid waste services include garbage, recycling and yard waste collection. Along with providing commercial service, we serve a residential customer base of 54, 000 households. In 2011, approximately 32,000 tons of yard waste (with some food scraps included) were collected for composting. Our materials are composted in Puyallup at the Compost Factory, owned and operated by Waste Connections, Inc..

In order to achieve success in our goals to divert and recycle organic materials, we rely on the facilities that compost process our materials to do so in the most environmentally responsible way possible, with minimal impacts on human health and the environment. Managing organic feed stocks means controlling odors and maintaining quality end-products. We support the Department of Ecology's (DOE) efforts to maintain high standards and address concerns about odors and product quality. We have, however, questions and/or comments regarding the scientific validity for some of the proposed changes.

1. What are the health impacts of plastic film residue in finished compost? Is there scientific evidence to quantify or support the proposed unacceptable levels of film plastic particles?

2. What is the basis or documented health threat for identifying rocks as a contaminant in finished compost?

3. We urge the DOE to keep the current standards for biosolids compost and to clarify that biosolids compost not be regulated as solid waste under WAC 173-350. The biosolids quality standards in WAC 173-30 are based on extensive scientific risk assessment that protects public health and the environment. Is there evidence that these are not adequate?

4. Regarding WAC 173-350-220(10), the "Designation of Composted Materials," we urge the DOE to retain the original language that states "composting materials meeting the testing parameters of Table 220-B are no longer considered a solid waste whether stored on-site or distributed off-site." We consider finished compost and biosolids compost to be market commodities, not solid waste destined for processing or disposal.

Good compost is essential for a variety of applications and markets including gardeners, landscapers, agriculture and those agencies who apply compost for erosion control. To ensure quality of the end product produced from materials we collect, we work to educate both our residential, commercial and Transfer-Station customers to prevent contamination of compostable material. We are working to promote the use of compost by making bagged, finished compost more available to our public and to promote the expansion of compost-end markets. We use these materials in our municipal land applications and erosion control efforts.

Because of our roles in the collection, production and use of organic materials, we urge the DOE to seriously reconsider regulating finished compost products as solid wastes. We also support the comments and recommendations of Washington Organics Recycling Council and the NW Biosolids Management Association.

Thank you for the opportunity to comment on WAC 173-350.

Sincerely,

Gary H. Kato
Acting Division Manager

GHK:ja:sa

File: Recycling/Organics/Compost

Dorsey, Kyle (ECY)

From: Larry LeSueur [Larry.LeSueur@wiserg.com]
Sent: Friday, November 02, 2012 4:09 PM
To: Dorsey, Kyle (ECY)
Cc: Larry LeSueur; Victor Tryon; Van Katzman
Subject: WISErg response to proposed WAC 173-350 rule changes
Attachments: WISErg response to 173-350 rule proposal (final).docx; WISErg proposed language mark-up version of WAC 173-350 (final).docx

Follow Up Flag: Follow up
Flag Status: Flagged

Kyle –

Attached is WISErg's formal written response on the proposed changes to WAC 173-350 with primary emphasis on section 225 (Other organic material handling activities). There are two attachments:

1) WISErg response to 173-350 rule proposal (final) .docx
2) WISErg proposed language mark-up version of WAC 173-350 (final) .docx
    a. Includes additional language under 173-350-020 condition 23)
    b. Includes additional language under 173-350-225-A subcategory (4)

As a small business, this was an enormous undertaking and diverted several critical team resources and legal counsel for us to respond in the limited time this has been available. I apologize if any of the information we have provided is lacking full supporting details or conversely is broader in reach then necessary – in our effort to try to communicate both a business and scientific basis for the requested changes, we realized it was a significant undertaking that simply could not be compressed in the allotted timeframe we had for responding.

We did not have capacity to apply the same level of constructive response on sections 200 (Composting)and 250 (Anaerobic digesters) – I mention this because there are many innovative small scale (appliance like) and emerging technologies entering the market and many already in commercial production across Europe and Asia, these span composting to digesters, and we see strong community based opportunities to handle organics waste (residential, yard, etc) for the right entrepreneur.

We hope that our input is taken as constructive and helps the DOE make necessary and practical adjustments to the proposed regulation or consider time for additional public feedback if applicable. We are available to clarify any comments or provide further assistance. We currently have our process running and would be happy to demonstrate our technology if a hands on experience can help quantify a regulatory approach.

Your efforts are much appreciated.

Larry

Larry LeSueur
CEO and Co-Founder

WISErg Corporation
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Issaquah, WA 98027

Company: (800) 592-2511
Direct: (425) 526-6791

Comments to Proposed Rule Amending WAC Chapter 173-350, Solid Waste Handling Standards

11/2/2012

These comments are submitted by WISErg Corporation, in response to the Washington Department of Ecology's (DOE's) rule proposal, published in the Washington State Register on October 3, 2012, proposing to amend WAC Chapter 173-350, entitled "Solid Waste Handling Standards" (the "Rule Proposal"). We thank the Department of Ecology personnel for their careful consideration of: (1) our comments and reasoning behind them as set forth in the body of this document; (2) our suggestions for language modifications included in the mark up of WAC 173-350; and (3) our request for additional and specific actions provided at the end of this document if the DOE chooses not to incorporate our suggested language modifications.

For the reasons set forth below, we believe that certain aspects of the Rule Proposal are problematic and will serve to actually discourage innovative methods of handling and recycling organic materials – contrary to DOE's stated desire in adopting the Rule Proposal and the statutory mandate established under RCW 70.95. We also believe that certain aspects of the Rule Proposal are troublesome since they serve to perpetuate existing, yet problematic waste management methods that have demonstrable negative health and environmental impacts. We encourage DOE to carefully re-consider and revise this rulemaking, primarily with respect to innovating recycling businesses who will be negatively impacted by the added cost and regulatory burden, without commensurate benefits to public health or environmental quality.

Introduction and Background

There is a nascent, but important and growing market segment of recycling companies in Washington State that are focused on developing innovative methods of reducing solid waste landfill disposal by recycling organic and other materials through resource recovery practices that produce saleable, higher-value products which can be returned to the economic mainstream without additional burdens on air and water quality, or lessening the quality of life of residential or commercial neighbors. Such technologies manage source-separated materials at the point of generation, at lower volumes, and transform the materials into products which are no longer "waste" in the traditional sense. For example, WISErg's technology is installed on-site at a customer's location, and allows the customer to convert its food scraps and other organic materials into a liquid fertilizer product which can then be sold as a retail product without nuisance odors, vermin attraction or increased health hazards. Typically, these innovative technologies are characterized by their transformation of energy or increase of biomass. These types of "zero waste" or "closed loop" technologies are consistent with the State's legislative priorities, as articulated in RCW 70.95, as they promote sustainability and they also offer the State and local municipalities a number of other economic benefits. These innovative technologies also create good, high-paying jobs for Washington residents. Indeed, in its Rule Proposal Notice, DOE explicitly" states that one of its goals in adopting the Rule Proposal is to "allow for new, innovative methods of handling organic materials, including permit exemptions." However, as currently drafted,

the Rule Proposal may end up having the opposite effect. Although well intentioned, the permit exemptions created by the Proposed Rule are too narrow and restrictive and, from a practical business standpoint, will result in a number of negative, unintended consequences, as explained below.

Practical Business Effects of the Rule Proposal

In new Section 173-350-225, the Rule Proposal establishes a conditional and qualified permit exemption for "other conversion technologies" which handle up to 3,000 gallons of liquid or semi-solid waste on site, when individual tanks do not exceed 1,000 gallons in capacity. Facilities which manage less than 1,000 gallons of materials appear to have no notification and reporting requirements; however, facilities which manage more than 1,000 gallons but less than 3,000 gallons of materials must submit notification of intent and submit an annual report to the DOE.

This new permit exemption, as a conceptual matter, is a strong and welcomed support of innovation in organic recycling. However, from a practical business standpoint, as written and applied to developing commercial applications (beyond the early pilot studies) the exemption is too restrictive and will result in a number of negative business consequences for innovative recycling companies such as WISErg, perhaps even forcing these innovators with lower-risk technologies to dramatically alter their business plans or prospects for future investment and job creation. For example, by limiting individual tank size to 1,000 gallons, WISErg would need to alter its current product plan and develop a smaller sized tank unit for installation at customer facilities. This in turn, would create the need for more frequent pick-ups from customer locations, thereby not only increasing the costs of the product to the customer, but also resulting in increased carbon emissions resulting from more truck trips to and from customer locations. An immediate business result of these transportation inefficiencies is that more remote or non-urban food waste producers would no longer be an economical customer to service. These customers therefore would not benefit from developing technologies only because of the capacity restrictions. This is already the case for traditional composting services. The lack of correlation between the proposed capacity requirements and potential for public health hazard and standard transport volumes (typically 5,000 gallons or 9,000 gallons) suggest the need for the agency to reconsider the volume limits. We would encourage the agency to align volume standards with existing policy defined by Department of Transportation standards for road weights and material category.

In addition, the 3,000 gallon total facility threshold to qualify for an exemption is too restrictive and will mean that many customer locations will have onerous and expensive permitting requirements imposed on their recycling operations. WISErg believes that if its customers are required to seek a solid waste permit, it would effectively eliminate or materially diminish customer sales. The Department of Ecology staff should imagine the effect on an "organic", "green" grocery store or a business/educational entity with commercial kitchens (i.e. Microsoft, Boeing, University of Washington) being required to register as "solid waste handling facilities". In fact, there is no major change in the standard business practice of these organizations except to immediately recycle their organic waste on site instead of storing it in increasingly expensive dumpsters for hauling to distant dump sites. These unjustified restrictions will

mean that more customers will look for ways to dispose of food waste and other organic materials, such as landfill disposal, or through grinding appliances which essentially enable them to (lawfully or unlawfully) dispose of organic materials down the drain. This will increase the load on publicly owned treatment works and also increase the risk of illegal dumping or other unlawful disposal.

Even where customer sites are below the 3,000 gallon threshold, WISErg is concerned that the 1,000 gallon threshold for notification and reporting may chill customer behavior and inhibit the adoption rates for WISErg's technology and other similar conversion technologies. There is also no clear understanding of how total capacity is to be calculated for a customer who operates multiple commercial kitchens or store locations either on a contiguous piece of property such as a campus (Microsoft, Boeing, University of Washington), or multiple adjacent properties related to a single entity (e.g., a grocery store that leases an adjacent lot). If total capacity is calculated based on all deployments within a legally defined parcel or under a single entity, then the exemption listed, regardless of proposed exemption capacities, becomes irrelevant and full permitting requirements will be required. This will become a major deterrent for new innovative business approaches.

We request that the agency consider retention time as a more effective or alternate measure of potential threat to public health or environmental quality. That is, while extended retention times are perhaps necessary and applicable to traditional composting, an alternate technology under WAC 173.350.225 that is more efficient at processing and quicker to move recycled material offsite should not be unnecessarily restricted to lower capacity requirements. A maximum retention time of 30 days for an organic waste-derived product, for example, has the intended effect of limiting over-all on-site capacity without being technology dependent or placing unequal burdens on different waste management strategies.

Additionally, we believe that a retention time requirement, in place of arbitrary capacity limits, effectively enables the DOE to achieve the intended goals of preventing adverse environmental impacts and public nuisance complaints from in-process stockpiles by assuring that the derived-product is actually commercially viable(i.e., by essentially limiting the amount of derived product that can be stockpiled on site). Retention time in WAC 173.350.225 would also harmonize with proposed wording changes proposed for implementation under composting.

Thus, while we understand that DOE's motivation in creating the permit exemption in Section 173-350-225 was to help foster innovation and assist organics recycling companies such as WISErg, the practical effects of the Rule Proposal may confound this objective and create unintended and undesirable consequences. Because the volume thresholds are so low, the tank size limits are so restrictive, and the total capacity (e.g., calculation per site or entity) are unclear, very few conversion technologies will actually qualify for the exemption. Thus, there is a significant risk that the Rule Proposal will end up stifling innovation and investment in new technologies, by imposing a series of additional regulatory burdens and costs on innovative, emerging companies who are attempting to reduce dependence on landfills and create new products through recycling. This will hinder job creation in Washington. It will also have the perverse effect of entrenching the status quo; i.e., helping those larger companies who are already permitted or otherwise well capitalized and who will benefit disproportionately by the high

regulatory cost burden imposed on smaller competitors. And perhaps most alarmingly, it will create additional incentives for generators of organic materials to look for other low cost methods of organics disposal, either into the public sewer systems (lawfully or unlawfully), through landfilling, or through other means of illegal dumping (particularly as the cost of composting such materials continues to rise).

WISErg offers the following example of how the overly-restrictive capacity limits of WAC 173.350.225 will have unintended, counter-intuitive effects. As a technology innovator, WISErg intends to offer "collection data" to its customers. Tracking what is discarded, more specifically, tracking what is discarded from which department or area of a grocery store over time, is far more likely to incentivize waste reduction than punitive or other regulatory actions could accomplish. Adequate "sample" size will make this more valuable and properly incentivizes the industry as desired by RCW 70.95. More specifically, WISErg's innovative reporting provides individual metrics and reporting to allow producers to reduce and eliminate unnecessary waste streams such as over prepared foods and aggressive produce culling. The Environmental Protection Agency estimates that 30% of food waste currently being disposed of is avoidable. WISErg's technology equips businesses with appropriate metrics to enact food reduction goals motivated by direct measurable financial outcomes. By creating regulatory barriers to customer adoption (such as the overly restrictive exemption proposed in 173-350-225), customers will be prevented from accessing these ancillary collection data benefits, because the regulatory cost of adopting the underlying technology is perceived as too high.

Based on the foregoing, WISErg has proposed two alternative means of addressing these issues and fostering recycling. The first is a categorical exemption (added to 173-350-020) for certain types of conversion technologies which are generating a saleable product and while at the same time producing no residual solid waste byproduct. The second alternative is to add an additional classification of conversion technologies to the chart on 173-350-225 which would qualify for permit exemption, and which raises the threshold for notification and reporting. We have proposed actual language for such changes in the attached mark-up of the Rule Proposal.

We would also encourage the agency to retain the emphasis on encouraging relatively non-hazardous, non-traditional pilot projects through reduction of regulatory burdens and exemption from additional regulatory oversight from local public health agencies (beyond controlling odors and disease vectors). Given the direction of recycling technologies, maintaining broad exemptions for pilot projects serves as an important mechanism to encourage innovation and highly decentralized re-use/re-purpose models where communities and neighborhoods (in the broadest sense) could become responsible for their own, local waste output and recycling efforts.

Pilot projects and proof of concept activities require minimal elements from regulatory agencies to lower the barriers to entry. It would be helpful to maintain an exemption when capacity or retention times are minimal (for example an onsite retention time of less than 10 days), which requires only a Notice of Intent to Operate before operations may proceed, contains minimal reporting requirements which may be no more than notice to local public health and fire/rescue agencies, and finally, a certain timetable within which DOE (or other applicable regulatory bodies) will determine whether or how the activity will be regulated.

Policy Considerations

Statutory authority for WAC 173-350 is derived from RCW 70.95 entitled Solid Waste Management-reduction and recycling. Without any pejorative reading or cherry picking of the content of RCW 70.95 findings and priorities, the Washington legislature meant to set policies that would reduce the "blight of solid wastes" through strategies primarily meant to encourage reduction and recycling.

At enactment, the legislature found (see RCW 70.95.10. Legislative finding-priorities-goals): (1) "ever mounting problems involving disposal of garbage, refuse and solid waste materials resulting from domestic, agricultural, and industrial activities; (2) that "traditional methods of disposing of solid wastes in this State are no longer adequate to meet the increasing problem" and that "solid wastes pollute our land, air and water resources, blight our countryside, adversely affect land values and damage the overall quality of our environment;" (3) "waste reduction must become a fundamental strategy of solid-waste management;" (4) "source separation of waste must become a fundamental strategy of solid waste management;" and (5) that "steps should be taken to make recycling at least as affordable as and convenient to the ratepayer as mixed waste disposal".

A fair reading of the legislative priorities and goals should also note that the legislature prioritized the entire set of solid waste management goals in Chapter 70.95 and the legislature included strategies like collecting data, training of operators of landfills and incinerators well below the priorities of reducing waste and incentivizing recycling. We are specifically requesting, and have provided examples, for the Department of Ecology to more carefully balance the need to protect public health with the clearly stated demand from the legislature for the regulation to incentivize recycling and resource recovery from emerging technologies, rather than restrict them through regulatory burden.

As new technologies emerge which have the ability to recycle, convert or transform waste materials into saleable products, keeping them in or returning them to the economic mainstream, the legislature needs to re-examine the definition of the term "solid waste" to better incentivize technologies which view materials that formerly were considered solid waste, now as feedstock or resource for new and useful products. This is consistent with the legislature's goals in adopting Chapter 70.95. Continuing to manage these materials as "solid waste" will create economic and regulatory barriers that will chill innovation and stifle attempts to increase landfill diversion. All residents and taxpayers of Washington state would agree that these regulatory barriers are contrary to the Legislative intent of RCW 70.95

While we understand that in adopting the Rule Proposal, the Department of Ecology was not tasked with creating a new definition for the term "solid waste," it is also important that DOE's more limited rulemaking does not create undue barriers or burdens upon the adoption of new conversion technologies focused on organic material recovery and recycling. Particularly where such technologies pose little public health risk and yield no solid waste residual.

We appreciate the complexity of regulating a process when defined terms are not concurrently updated – both points raised and discussed during the recent public hearings in Bellevue and Yakima. The lack of

definition for “solid waste” and a clear definition for when a product mined or derived from “solid waste” should no longer be managed under solid waste handling procedures appear to be basis enough for DOE to consider additional time before adopting new regulations, especially for the areas outlined in the proposed 173-350-225, until the defining terms and definition of “solid waste” have been reviewed for consideration of inclusive industries, public feedback from all affected industries and regulatory agencies(Department of Commerce or the Department of Agriculture), and emergency response agencies and up-dated language is proposed that is more in line with the objectives of RCW 70-95.

In absence of taking additional time for this consideration to clarify and update the “solid waste” definition, we believe that the additional exemptions proposed by WISErg are consistent with the legislative objectives of Chapter 70.95, and will serve as a more effective regulatory “placeholder” during this interim period before the legislature adopts a more refined regulatory framework for this so-called “waste to products” industry. The exemptions proposed by WISErg will allow recycling companies to continue to innovate and attract investment (and create jobs), while still setting limits and boundaries that ensure the protection of public health and the environment.

Additional Industries May be Negatively Affected by the Rule Proposal

The Rule Proposal appears to equate liquid waste with other solid waste, and sets narrow limits for permit exemptions, thereby arguably adding a new layer of regulation to a host of companies and industries which, heretofore, have not been regulated as solid waste under WAC 173-350. This list of companies includes those innovators working to recover organic materials in a derived liquid form or as a liquid product (such as WISErg), but would also theoretically include a number of existing food and beverage companies, fertilizer, soap, tofu, soy fermentation, and other similar enterprises which manage organic based materials and produce or generate liquid waste. The new regulations would impose new permitting and reporting requirements on such businesses, despite the fact that the liquid materials handled by these businesses may already be exempted by or otherwise regulated under other statutory authorities such as the Clean Water Act.

From a scientific standpoint, the definition of “liquid” proposed in the amended WAC 173-350 is overly broad and elastic and is likely to include industrial processes not intended to be regulated under Solid Waste. For example, even fully open vessels containing denser than air gases (such the machine-generated “fog” from the latest Lady Gaga concert or nitrogen gas used to overlay oxygen sensitive compounds) would fit the proposed definition of liquid. The proposed definition of “liquid” also fits such obviously “solid” commercial products such as pepper corns, quinoa, sorghum seed, latex solids, slaughter-house offal, cellulose and gypsum-based wall board mud, as well as, drilling mud or clay. The easily elastic, and non-exclusive, definition of “liquid” suggests the DOE, in fact, wishes to regulate as solid waste, materials in all forms, whether gas, liquid, or solid. This creates the potential for confusion and overlapping regulatory regimes, including requirements imposed by the Clean Air Act and the Clean Water Act. It also means that a number of industries and businesses which have heretofore not been regulated under WAC 173-350, may now be brought under its umbrella, if they are using organic materials as a feedstock for their commercial products.

New Categories for Exemption and Increased Exemption Thresholds

As described above, we believe that the exemption categories and thresholds established by DOE under 173-350-225 are not adequately crafted to address many of the recycling-focused businesses that may be handling organic materials for purposes of resource recovery. We believe the currently proposed categories and thresholds reach too far downstream to small quantity recyclers and, most significantly, potentially even generators themselves, and will thus impose a substantial new regulatory and permitting burden on recycling companies, thereby stifling innovation and promoting landfill disposal or more traditional composting. The cost (in terms of dollars, time, and human resources) in obtaining a permit for organics recycling companies will be crushing.

As such, we have proposed two new alternative exemptions to address this important and nascent business sector. First, we have proposed a categorical exemption be added to 173-350-020 which provides that the chapter does not apply to conversion technologies or appliances that are used or installed at the customer/generator site for the purposes of producing a saleable product from source separated organic materials and which generate no solid waste residual. Such technologies meeting the above description are not managing a solid waste, but mining useful and re-usable materials for purposes of creating a new, saleable commercial product. As such, they should be outside the scope of the solid waste handling regulations in 173-350. To the extent they pose water quality or public health issues, they would still be regulated under other statutes and authorities, including the local public health department.

Secondly, as an alternative, we have proposed adding another, more specific classification to the table in Section 173-350-225, which would create a conditional permit exemption for unlimited volumes generated by conversion technologies or appliances that are used or installed at the customer/generator site for the purposes of producing a saleable product from source separated organic materials and which generate no solid waste residual. To qualify for this exemption, the user would need to meet the following conditions: a) the derived product materials may not remain on site for more than thirty days; and b) the conversion technology and derived product materials do not pose a risk of, i) nuisance odors beyond the boundary of the property, ii) a risk of gas releases or explosion fueled by gases produced by anaerobic microbes, or iii) a risk of waste discharges from abandoned or improperly managed facilities and iv) the processing tank is continuously monitored for pH, aeration and vessel leakage. These conditions and limitations on the permit exemption help address the primary health and safety issues identified as concern to DOE. In addition, for larger volume generators who are handling more than 10,000 gallons of material on-site per a single commercial operation, the DOE would be provided with advance notification, annual reporting, and certain other conditions would apply.

These exemption categories and thresholds are much more realistic and sensible for organics conversion and recycling companies, and would serve to protect public health, while also fostering innovation by imposing a reasonable and rational regulatory framework that balances the cost of compliance with the environmental risks associated with these product-generating technologies. From a scientific and

human health standpoint, many conversion technologies such as WISErg's technology, pose little risk to health and safety or environmental exposure. For example, WISErg's technology, which employs an open-vessel, oxidative (i.e., non-fermentative) process, does not produce nuisance odors and does not produce hazardous or explosive gases like hydrogen, hydrogen sulfide or methane, in the ordinary course of business.

Moreover, to the extent these new exemption categories contradict other existing requirements with respect to tank regulations (e.g., 173-350-330), then DOE should make clear that these exemptions also would apply to any permitting requirements that may be applicable under any such tank regulations. Based on the limited risks to human health and the environment (and the conditions and qualifications already imposed on the permit exemption as described above), such a clarification is justified.

The new thresholds for notification and reporting, we believe, are more consistent with business realities, result in more harmonious alignment with existing WAC definitions and transportation rules and will impose much less of an economic burden on the adoption of new conversion technologies. The current Rule Proposal, as drafted, could deter a significant number of customers from adopting organics recycling and recovery technologies, as the burden of notification, tracking and annual reporting is not part of their core business and is not an obligation they may be willing to undertake. From the customer's perspective, it may simply be easier for them to grind up organic material and dispose of it down the drain, or simply place it into a container for landfill disposal. We recognize that changing cultural behavior is critical and approaches that provide financial incentives, through cost reduction, will accelerate behavior change more rapidly than regulation with deterrents that prevent the end user from willingly participating because of the increased cost and complexity.

Specific Recommendations:

Proposed alternative language

We have included a marked-up version of the WAC 173-350 Rule Proposal with our proposed alternative language for the additional exemptions, as described above. Please see the mark up attachment.

Other specific recommended actions:

In the event that DOE does not adopt the alternative language proposed in the mark-up material provided, then we propose that the DOE consider and adopt the following specific recommended actions and/or changes prior to issuing the Proposed Rules:

1. DOE should defer implementation and seek further legislative guidance and statutory authority prior to the extension of solid waste regulations to processes that are predominately liquid in nature or that produce liquids as the primary product but utilize solid components in the liquid development process (including fertilizer, soap, beverage; tofu; soy fermentation and similar businesses).
2. DOE should postpone implementation of the amendatory changes to WAC 173-350 and reassess their notification strategies so likely impacted businesses or industries (e.g., beverage industry

including breweries, wineries and distilleries among others) can be properly notified and heard so that beneficial and negative impacts of amendments to WAC 173-350 can be adequately assessed by DOE.

3. DOE should postpone implementation of the amendatory changes to WAC 173-350 to address inconsistencies on exemption policy across each of the major sections (200 and 250) accounting for small business impact and new innovation technologies entering the market. As a small business we have focused our efforts in providing feedback on WAC 173-350-225 but see similar issues which will deter innovation in use of in-vessel composting technologies (appliance like) and small scale liquid anaerobic digesters which we see a necessary option for in handling high solids waste streams such as yard wastes at a community level.
4. DOE should postpone implementation of the amendatory changes to WAC 173-350-225 to allow for additional feedback consideration and public input given this section was only recently introduced and has not been had the benefit of public scrutiny to fully understand the broader implications on small businesses, regional economic impact, and environmental considerations.
5. DOE should postpone implementation of the amendatory changes to WAC 173-350 until all affected local public health and fire/rescue agencies have been notified and had to a chance to comment on the expansion of their respective obligations resulting from the amended WAC.
6. DOE should postpone implementation of the "liquid" associated amendments in WAC 173-350 until the Department adequately assesses whether the proposed changes (1) actually favor established business activities such as traditional land-based composting (through, for example, increased barriers to entry; arbitrary limits on capacities, etc.); (2) will encourage generators to increase reliance (lawfully or unlawfully) on disposal of solid materials into public sewer drains and publicly owned treatment works; and (3) actually hinder the development of innovative methods of recycling. DOE should be mindful that the legislative authority for WAC 173-350 arises from RCW 70.95 which was adopted by the legislature intentionally to increase innovation in recycling. A complete range of recycling strategies that meet the needs of modern society have not yet been developed, and more not less, innovation is important to encourage adequate recycling technologies.
7. DOE should redefine "liquid" in the amendatory section to more reasonably harmonize with other definitions of "liquid" found commonly in federal law and explicitly defined elsewhere in the RCW and WAC and nearby municipal codes. For example, the Seattle Municipal Code specifically exempts liquids for the solid waste language when the product includes source-separated, recyclable materials.
8. DOE should explicitly exempt recycling processes that that encounter only minimal to negligible traditional solid waste in WAC 173-350.
9. DOE should explicitly exempt open-vessel, oxidative (non-fermentative) industrial processes with minimal to negligible sortable, solid-waste contaminants that result in liquid saleable products from the WAC 173-350. In the usual course of business, open-vessel, oxidative processes do not produce nuisance odors, do not produce hazardous or explosive gases like hydrogen, hydrogen sulfide or methane.

10. DOE should explicitly exempt open-vessel, oxidative (non-fermentative) industrial process with negligible to minimal, sortable solid waste contaminants that result in predominately liquid or dried-liquid, saleable products that are registered with the WSDA as fertilizers.
11. In the amended WAC, DOE should increase the capacity/volume of "other conversion technologies" and processes, both on and off site, to levels with better balance between public health concerns (which appear minimal) and economic development.
    As with the slaughter industry, WAC 173-350 should specifically prohibit the commercial or industrial disposal of solid, vegetative and meat scraps by grocery stores, restaurants and cafeterias, butcher stores through dumping of otherwise untreated, ground or pulped waste into the public sewer system.
12. Reduce the regulatory burden of the amended WAC by restricting reporting requirements for exempt facilities under WAC 173-350-225(A)(3) to identification of principal processing sites, tick-box categorization of production volume, identification of local public health agency, and identification of the responsible local fire/rescue agency without requiring permits, reports, or other documentation from customers.
13. Reduce the regulatory burden of the amended WAC by providing an exemption for permitting to recycling processes that that encounter only minimal to negligible traditional solid waste as contaminants to the recycling process.
14. Reduce the regulatory burden of the amended WAC by providing an exemption for permitting open-vessel, oxidative (non-fermentative) industrial processes that result in liquid, saleable products with low-level solid-waste contaminants or where such "contaminants" become included by design in the liquid product.
15. Reduce the regulatory burden of the amended WAC by providing an exemption for permitting to open-vessel, oxidative (non-fermentative) industrial processes with negligible to minimal solid-waste contaminants that result in predominately liquid or dried-liquid, saleable products that are registered with the WSDA as fertilizers.
16. Reduce the regulatory burden of the amended WAC by reducing the notice and reporting requirements for recycling processes when that industry only encounters only minimal to negligible solid waste that is not incorporated into the recycled product.
17. Reduce the regulatory burden of the amended WAC by reducing the notice and reporting requirements for open-vessel, oxidative (non-fermentative) industrial processes with negligible to minimal solid-waste contaminants that result in liquid saleable products. Since justification for the amendatory extension to liquids is not provided in RCW 70.95, the DOE should be required through amendments in WAC 173-350 to identify the specific public nuisance or hazards the agency intends to avert so as to align the intended benefits with the specific regulatory requirements.
18. The DOE should be required in amendments to WAC 173-350 to estimate the cost and time of preparation of notices, permits and reporting requirements for businesses / industries required to comply with proposed amendatory changes in the WAC. We believe the analysis of cost impacts of the Rule Proposal published by DOE dramatically underestimates the actual and potential impact of the new rules, due in part to the fact the proposed permit exemptions for other conversion technologies is so narrow and restrictive.

19. The DOE should be required in amendments to WAC 173-350 to notify each local public health agency and fire/rescue agency of the potential effects on the respective agency of the expansion of the amended WAC 173-350.
20. The DOE should be required to fund the estimated costs on local public health and fire/rescue agencies due to expansion of obligations from the amended WAC. The DOE should be required in amendments to WAC 173-350 to share data obtained from notices, permits and reporting with affected local agencies including local public health agencies and fire/rescue agencies in order to ensure that the perceived public benefits of such notices, permits, and reports are actually accrued.

AMENDATORY SECTION (Amending Order 99-24, filed 1/10/03, effective 2/10/03)

WAC 173-350-020 Applicability. This chapter applies to facilities and activities that manage solid wastes as that term is defined in WAC 173-350-100. This chapter does not apply to the following:

(1) Overburden from mining operations intended for return to the mine;

(2) Wood waste used for ornamental, animal bedding, mulch and plant bedding, or road building purposes;

(3) Wood waste directly resulting from the harvesting of timber left at the point of generation and subject to chapter 76.09 RCW, Forest practices;

(4) Land application of manures and crop residues at agronomic rates;

(5) Agricultural composting when all agricultural wastes are generated, processed, and applied on-farm at agronomic rates in accordance with accepted agricultural practices. This categorical exemption does not apply to producers subject to RCW 70.95.306, composting of bovine and equine carcasses;

(6) Mushroom substrate production when materials that are not solid waste (such as processed chicken manure) are used in the production;

(7) Home composting as defined in WAC 173-350-100;

((~~(6)~~)) (8) Single-family residences and single-family farms whose year round occupants engage in solid waste disposal regulated under WAC 173-351-700(4);

((~~(7)~~)) (9) Clean soils and clean dredged material as defined in WAC 173-350-100;

((~~(8)~~)) (10) Dredged material as defined in 40 C.F.R. 232.2 that is subject to:

(a) The requirements of a permit issued by the U.S. Army Corps of Engineers or an approved state under section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1344);

(b) The requirements of a permit issued by the U.S. Army Corps of Engineers under section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413); or

(c) In the case of U.S. Army Corps of Engineers civil works projects, the administrative equivalent of the permits referred to in (a) and (b) of this subsection, as provided for in U.S. Army Corps of Engineers regulations, including, for example, 33 C.F.R. 336.1, 336.2, and 337.6;

((~~(9)~~)) (11) Biosolids that are managed under chapter 173-308 WAC, Biosolids management;

((~~(10)~~)) (12) Domestic septage taken to a sewage treatment plant permitted under chapter 90.48 RCW, Water pollution control;

((~~(11)~~)) (13) Liquid wastes, the discharge or potential discharge of which, is regulated under federal, state or local water pollution permits;

((~~(12)~~)) (14) Domestic wastewater facilities and industrial wastewater facilities otherwise regulated by federal, state, or

local water pollution permits;

((~~(13)~~)) (15) Dangerous wastes fully regulated under chapter 70.105 RCW, Hazardous waste management, and chapter 173-303 WAC, Dangerous waste regulations;

((~~(14)~~)) (16) Special incinerator ash regulated under chapter 173-306 WAC, Special incinerator ash management standards;

((~~(15)~~)) (17) PCB wastes regulated under 40 C.F.R. Part 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions, except for:

(a) PCB household waste; and

(b) PCB bulk product wastes identified in 40 C.F.R. Part 761.62 (b)(1) that are disposed of in limited purpose landfills;

((~~(16)~~)) (18) Radioactive wastes, defined by chapter 246-220 WAC, Radiation protection--General provisions, and chapter 246-232 WAC, Radioactive protection--Licensing applicability;

((~~(17)~~)) (19) Landfilling of municipal solid waste regulated under chapter 173-351 WAC, Criteria for municipal solid waste landfills;

((~~(18)~~)) (20) Drop boxes used solely for collecting recyclable materials;

((~~(19)~~)) (21) Intermodal facilities as defined in WAC 173-350-100; ~~and~~

((~~(20)~~)) (22) Solid waste handling facilities that have engaged in closure and closed before the effective date of this chapter; ~~.~~

(23) Conversion technologies or appliances that are used or installed at the customer/generator site for the purposes of producing a saleable product from source separated organic materials

and which generate no solid waste residual.

[Statutory Authority: Chapter 70.95 RCW. 03-03-043 (Order 99-24), § 173-350-020, filed 1/10/03, effective 2/10/03.]

AMENDATORY SECTION (Amending Order 99-24, filed 1/10/03, effective 2/10/03)

WAC 173-350-030 Effective dates. (1) *Effective dates.* These standards apply to all facilities, except existing facilities, ((~~upon the effective date of this chapter~~)) when updated or new sections in this chapter become effective.

(2) *Effective dates - Existing facilities.*

(a) The owner or operator of existing facilities ((~~shall~~)) must:

(i) Meet all applicable operating, environmental monitoring, closure and post-closure planning, and financial assurance requirements of this chapter within ((~~twenty-four~~)) twelve months of the effective date of updated or new sections in this chapter; and

(ii) Meet all applicable performance and design requirements, other than location or setback requirements, within ((~~thirty-six~~)) eighteen months of the effective date of updated or new sections in this chapter.

(b) These standards apply to all new solid waste handling units at existing facilities upon the effective date of this chapter.

(c) The owner or operator of existing facilities ((~~shall~~)) must

initiate the permit modification process outlined in WAC 173-350-710(4) within ((~~eighteen~~)) twelve months after the effective date of updated or new sections in this chapter. If a permit modification is necessary, every application for a permit modification ((~~shall~~)) must describe the date and methods for altering an existing facility to meet (a)(i) ((~~through (iii)~~)) and (ii) of this subsection.

(d) The jurisdictional health department ((~~shall~~)) must determine if a new permit application is required based on the extent of the changes needed to bring the facility into compliance.

(e) ((~~An existing facility completing closure within twelve months of the effective date of this chapter may close in compliance with the requirements of chapter 173-304 WAC, Minimum functional standards for solid waste handling. Any facility that does not complete closure within twelve months of the effective date of this chapter shall~~)) All facilities must close in compliance with applicable requirements of this chapter.

[Statutory Authority: Chapter 70.95 RCW. 03-03-043 (Order 99-24), § 173-350-030, filed 1/10/03, effective 2/10/03.]

AMENDATORY SECTION (Amending Order 04-12, filed 5/10/05, effective 6/10/05)

WAC 173-350-100 Definitions. When used in this chapter, the following terms have the meanings given below.

"Active area" means that portion of a facility where solid waste recycling, reuse, treatment, storage, or disposal operations are being, are proposed to be, or have been conducted. Setbacks ((~~shall~~)) must not be considered part of the active area of a facility.

"Aerobic decomposition" means decomposition of organic materials primarily by aerobic microbes under controlled conditions.

"Agricultural composting" means composting of agricultural waste as an integral component of a system designed to improve soil health and recycle agricultural wastes. Agricultural composting is conducted on lands used for farming.

"Agricultural wastes" means wastes on farms resulting from the raising or growing of plants and animals including, but not limited to, crop residue, manure ((~~and~~)) from herbivores and nonherbivores, animal bedding, and carcasses of dead animals ((~~weighing each or collectively in excess of fifteen pounds~~)).

"Agronomic rates" means the application rate (dry weight basis) that will provide the amount of nitrogen or other critical nutrient required for optimum growth of vegetation, and that will not result in the violation of applicable standards or requirements for the protection of ground or surface water as established under chapter 90.48 RCW, Water pollution control and related rules including chapter 173-200 WAC, Water quality standards for groundwaters of the state of Washington, and chapter 173-201A WAC, Water quality standards for surface waters of the state of Washington.

"Air quality standard" means a standard set for maximum allowable contamination in ambient air as set forth in chapter

173-400 WAC, General regulations for air pollution sources.

"Anaerobic digester" means an enclosed vessel or container that processes organic material into biogas and digestate through microbial decomposition under anaerobic (low oxygen) conditions.

"Below ground tank" means a device meeting the definition of "tank" in this chapter where a portion of the tank wall is situated to any degree within the ground, thereby preventing visual inspection of that external surface of the tank that is in the ground.

"Beneficial use" means the use of solid waste as an ingredient in a manufacturing process, or as an effective substitute for natural or commercial products, in a manner that does not pose a threat to human health or the environment. Avoidance of processing or disposal cost alone does not constitute beneficial use.

"Biofilter" means a bed or layer of material that supports beneficial microorganisms, typically a mixture of compost and wood chips, designed to filter and treat air emissions. A biofilter adsorbs and then biologically degrades odorous compounds.

"Biosolids" means municipal sewage sludge that is a primarily organic, semisolid product resulting from the wastewater treatment process, that can be beneficially recycled and meets all applicable requirements under chapter 173-308 WAC, Biosolids management. Biosolids includes a material derived from biosolids and septic tank sludge, also known as septage, that can be beneficially recycled and meets all applicable requirements under chapter 173-308 WAC, Biosolids management.

"Buffer" means a permanently vegetated strip adjacent to an application area, the purpose of which is to filter runoff or

overspray from the application area and protect an adjacent area.

"Bulking agent" means an ingredient used to improve structure and porosity, or to lower moisture content, primarily in composting. Bulking agents improve convective air flow and reduce settling and compaction. Bulking agents may include, but are not limited to, clean wood waste, straw, and other high-carbon materials.

"Cab cards" means a license carried in a vehicle that authorizes that vehicle to legally pick up waste tires and haul to a permitted, licensed facility or an exempt facility for deposit.

"Capacity" means the maximum amount of material that can be contained. Capacity is identified by the conditions of exemption, the permit, or the plan of operations as approved by the jurisdictional health department or the department. All material includes, but is not limited to, incoming waste, feedstocks, stockpiled wastes, active composting, curing piles, composted materials, and sorted recyclable materials on-site.

"Captive insurance companies" means companies that are wholly owned subsidiaries controlled by the parent company and established to insure the parent company or its other subsidiaries.

"Channel migration zone" means the lateral extent of likely movement of a stream or river channel along a stream reach.

"Clean soils and clean dredged material" means soils and dredged material which are not dangerous wastes, contaminated soils, or contaminated dredged material as defined in this section.

"Closure" means those actions taken by the owner or operator of a solid waste handling facility to cease disposal operations or other solid waste handling activities, to ensure that all such

facilities are closed in conformance with applicable regulations at the time of such closures and to prepare the site for the post-closure period.

"Closure plan" means a written plan developed by an owner or operator of a facility detailing how a facility is to close at the end of its active life.

"Composted material" means organic solid waste that has undergone biological degradation and transformation under controlled conditions designed to promote aerobic decomposition at a solid waste facility in compliance with the requirements of this chapter. Composting is a form of organic material recycling. Natural decay of organic solid waste under uncontrolled conditions does not result in composted material.

"Composting" means the biological degradation and transformation of organic solid waste under controlled conditions designed to promote aerobic decomposition. Natural decay of organic solid waste under uncontrolled conditions is not composting.

"Conditionally exempt small quantity generator (CESQG)" means a dangerous waste generator whose dangerous wastes are not subject to regulation under chapter 70.105 RCW, Hazardous waste management, solely because the waste is generated or accumulated in quantities below the threshold for regulation and meets the conditions prescribed in WAC 173-303-070 (8)(b).

"Conditionally exempt small quantity generator (CESQG) waste" means dangerous waste generated by a conditionally exempt small quantity generator.

"Container" means a portable device used for the collection,

storage, and/or transportation of solid waste including, but not limited to, reusable containers, disposable containers, and detachable containers.

"Contaminant" means any chemical, physical, biological, or radiological substance that does not occur naturally in the environment or that occurs at concentrations greater than natural background levels.

"Contaminate" means the release of solid waste, leachate, or gases emitted by solid waste, such that contaminants enter the environment at concentrations that pose a threat to human health or the environment, or cause a violation of any applicable environmental regulation.

"Contaminated dredged material" means dredged material resulting from the dredging of surface waters of the state where contaminants are present in the dredged material at concentrations not suitable for open water disposal and the dredged material is not dangerous waste and is not regulated by section 404 of the Federal Clean Water Act (P.L. 95-217).

"Contaminated soils" means soils removed during the cleanup of a hazardous waste site, or a dangerous waste facility closure, corrective actions or other clean-up activities and which contain harmful substances but are not designated dangerous wastes.

"Controlled conditions" means the conditions in which facilities must be operated to meet the performance standards of WAC 173-350-040 and the applicable handling standards of this chapter. Controlled conditions at compost facilities may include, but are not limited to, controlling odors, run-on and runoff, moisture levels,

pH levels, carbon to nitrogen ratios, temperatures, oxygen levels, particle sizes, and free air space.

"Corrosion expert" means a person certified by the National Association of Corrosion Engineers (NACE) or a registered professional engineer who has certification or licensing that includes education and experience in corrosion control.

"Crop residues" means vegetative material leftover from the harvesting of crops, including leftover pieces or whole fruits or vegetables, crop leaves and stems. Crop residue does not include food processing waste.

"Dangerous wastes" means any solid waste designated as dangerous waste by the department under chapter 173-303 WAC, Dangerous waste regulations.

"Department" means the Washington state department of ecology.

"Detachable containers" means reusable containers that are mechanically loaded or handled, such as a dumpster or drop box.

"Digestate" means both solid and liquid substances that remain following anaerobic digestion of organic material in an anaerobic digester.

"Disposable containers" means containers that are used once to handle solid waste, such as plastic bags, cardboard boxes and paper bags.

"Disposal" or **"deposition"** means the discharge, deposit, injection, dumping, leaking, or placing of any solid waste into or on any land or water.

"Domestic septage" means Class I, II or III domestic septage as defined in chapter 173-308 WAC, Biosolids management.

"Domestic wastewater facility" means all structures, equipment, or processes required to collect, carry away, treat, reclaim, or dispose of domestic wastewater together with such industrial waste as may be present.

"Drop box facility" means a facility used for the placement of a detachable container including the area adjacent for necessary entrance and exit roads, unloading and turn-around areas. Drop box facilities normally serve the general public with loose loads and receive waste from ((~~offsite~~)) off-site.

"Energy recovery" means the recovery of energy in a useable form from mass burning or refuse-derived fuel incineration, pyrolysis or any other means of using the heat of combustion of solid waste that involves high temperature (above twelve hundred degrees Fahrenheit) processing.

"Existing facility" means a facility which is owned or leased, and in operation, or for which facility construction has begun, on or before the effective date of this chapter and the owner or operator has obtained permits or approvals necessary under federal, state and local statutes, regulations and ordinances.

"Facility" means all contiguous land (including buffers and setbacks) and structures, other appurtenances, and improvements on the land used for solid waste handling.

"Facility construction" means the continuous on-site physical act of constructing solid waste handling unit(s) or when the owner or operator of a facility has entered into contractual obligations for physical construction of the facility that cannot be canceled or modified without substantial financial loss.

"Facility structures" means constructed infrastructure such as buildings, sheds, utility lines, and piping on the facility.

"Feedstock" means a source separated waste material used as a component of composting, manufacturing, or as part of an industrial process.

"Food processing waste" means a source-separated organic material that is generated by a food processing facility licensed to process food by the United States Department of Agriculture, the United States Food and Drug Administration, the Washington state department of agriculture, or other applicable regulatory agency. Food processing wastes may include, but are not limited to, sludge from food processing water treatment plants, culls, DAF (dissolved air flotation from a food processing facility), pomace, and paunch manure, not intended for animal or human consumption.

"Garbage" means ((~~animal and vegetable waste resulting from the handling, storage, sale, preparation, cooking, and serving of foods~~)) putrescible solid wastes.

"Groundwater" means that part of the subsurface water that is in the zone of saturation.

"Holocene fault" means a plane along which earthen material on one side has been displaced with respect to that on the other side and has occurred in the most recent epoch of the Quaternary period extending from the end of the Pleistocene to the present.

"Home composting" means composting of on-site generated wastes, and incidental materials beneficial to the composting process, by the owner or person in control of a single-family residence, or for a dwelling that houses two to five families, such as a duplex or

clustered dwellings.

"Household hazardous wastes" means any waste which exhibits any of the properties of dangerous wastes that is exempt from regulation under chapter 70.105 RCW, Hazardous waste management, solely because the waste is generated by households. Household hazardous waste can also include other solid waste identified in the local hazardous waste management plan prepared pursuant to chapter 70.105 RCW, Hazardous waste management.

"Hydrostratigraphic unit" means any water-bearing geologic unit or units hydraulically connected or grouped together on the basis of similar hydraulic conductivity which can be reasonably monitored; several geologic formations or part of a geologic formation may be grouped into a single hydrostratigraphic unit; perched sand lenses may be considered a hydrostratigraphic unit or part of a hydrostratigraphic unit, for example.

"Incineration" means reducing the volume of solid wastes by use of an enclosed device using controlled flame combustion.

"Incompatible waste" means a waste that is unsuitable for mixing with another waste or material because the mixture might produce excessive heat or pressure, fire or explosion, violent reaction, toxic dust, fumes, mists, or gases, or flammable fumes or gases.

"Industrial solid wastes" means solid waste generated from manufacturing operations, food processing, or other industrial processes.

"Industrial wastewater facility" means all structures, equipment, or processes required to collect, carry away, treat, reclaim, or dispose of industrial wastewater.

"Inert waste" means solid wastes that meet the criteria for inert waste in WAC 173-350-990.

"Inert waste landfill" means a landfill that receives only inert wastes.

"Intermediate solid waste handling facility" means any intermediate use or processing site engaged in solid waste handling which is not the final site of disposal. This includes material recovery facilities, transfer stations, drop boxes, baling and compaction sites.

"Intermodal facility" means any facility operated for the purpose of transporting closed containers of waste and the containers are not opened for further treatment, processing or consolidation of the waste.

"Jurisdictional health department" means city, county, city-county or district public health department.

"Land application site" means a contiguous area of land under the same ownership or operational control on which solid wastes are beneficially utilized for their agronomic or soil-amending capability.

"Land reclamation" means using solid waste to restore drastically disturbed lands including, but not limited to, construction sites and surface mines. Using solid waste as a component of fill is not land reclamation.

"Landfill" means a disposal facility or part of a facility at which solid waste is permanently placed in or on land including facilities that use solid waste as a component of fill.

"Leachate" means water or other liquid within a solid waste

handling unit that has been contaminated by dissolved or suspended materials due to contact with solid waste or gases.

"Limited moderate risk waste" means waste batteries, waste oil, and waste antifreeze generated from households.

"Limited moderate risk waste facility" means a facility that collects, stores, and consolidates only limited moderate risk waste.

"Limited purpose landfill" means a landfill which is not regulated or permitted by other state or federal environmental regulations that receives solid wastes limited by type or source. Limited purpose landfills include, but are not limited to, landfills that receive segregated industrial solid waste, construction, demolition and landclearing debris, wood waste, ash (other than special incinerator ash), and dredged material. Limited purpose landfills do not include inert waste landfills, municipal solid waste landfills regulated under chapter 173-351 WAC, Criteria for municipal solid waste landfills, landfills disposing of special incinerator ash regulated under chapter 173-306 WAC, Special incinerator ash management standards, landfills regulated under chapter 173-303 WAC, Dangerous waste regulations, or chemical waste landfills used for the disposal of polychlorinated biphenyls (PCBs) regulated under Title 40 C.F.R. Part 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.

"Liquid" means a substance that flows readily and assumes the form of its container but retains its independent volume.

"Liquid waste" means any solid waste which is deemed to contain free liquids as determined by the Paint Filter Liquids Test, Method

9095, in "*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,*" EPA Publication SW-846.

"Lithified earth material" means all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments. This term does not include man-made materials, such as fill, concrete or asphalt, or unconsolidated earth materials, soil or regolith lying at or near the earth's surface.

"Local fire control agency" means a public or private agency or corporation providing fire protection such as a local fire department, the department of natural resources or the United States Forest Service.

"Lower explosive limits" means the lowest percentage by volume of a mixture of explosive gases that will propagate a flame in air at twenty-five degrees centigrade and atmospheric pressure.

"Manufactured organics" means source separated solid wastes, such as nonplastic coated paper plates, cups, compostable bags, and other items designed to decompose through composting, anaerobic digestion, or through other organic materials recycling processes. Manufactured organics do not include physical contaminants such as plastics and coated paper products that will not readily decompose under typical composting conditions, or wood derived fuel or wood waste as defined in this section.

"Manure and bedding" means manure (feces) and bedding from herbivorous animals such as horses, cows, sheep, and goats.

"Material recovery facility" means any facility that collects,

compacts, repackages, sorts, or processes for transport source separated solid waste for the purpose of recycling.

"Mobile systems and collection events" means activities conducted at a temporary location to collect moderate risk waste.

"Moderate risk waste (MRW)" means solid waste that is limited to conditionally exempt small quantity generator (CESQG) waste and household hazardous waste (HHW) as defined in this chapter.

"MRW facility" means a solid waste handling unit that is used to collect, treat, recycle, exchange, store, consolidate, and/or transfer moderate risk waste. This does not include mobile systems and collection events or limited MRW facilities that meet the applicable terms and conditions of WAC 173-350-360 (2) or (3).

"Municipal solid waste (MSW)" means a subset of solid waste which includes unsegregated garbage, refuse and similar solid waste material discarded from residential, commercial, institutional and industrial sources and community activities, including residue after recyclables have been separated. Solid waste that has been segregated by source and characteristic may qualify for management as a non-MSW solid waste, at a facility designed and operated to address the waste's characteristics and potential environmental impacts. The term MSW does not include:

✂ Dangerous wastes other than wastes excluded from the requirements of chapter 173-303 WAC, Dangerous waste regulations, in WAC 173-303-071 such as household hazardous wastes;

✂ Any solid waste, including contaminated soil and debris, resulting from response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation and Liability

Act of 1980 (42 U.S.C. 9601), chapter 70.105D RCW, Hazardous waste cleanup--Model Toxics Control Act, chapter 173-340 WAC, the Model Toxics Control Act cleanup regulation or a remedial action taken under those rules; nor

✂ Mixed or segregated recyclable material that has been source-separated from garbage, refuse and similar solid waste. The residual from source separated recyclables is MSW.

"Natural background" means the concentration of chemical, physical, biological, or radiological substances consistently present in the environment that has not been influenced by regional or localized human activities. Metals at concentrations naturally occurring in bedrock, sediments and soils due solely to the geologic processes that formed the materials are natural background. In addition, low concentrations of other persistent substances due solely to the global use or formation of these substances are natural background.

"New solid waste handling unit" means a solid waste handling unit that begins operation or facility construction, and significant modifications to existing solid waste handling units, after the effective date of this chapter.

"Nuisance odor" means any odor which is found offensive or may unreasonably interfere with any person's health, comfort, or enjoyment beyond the property boundary of a facility.

"On-farm" means activities taking place on any agricultural land under the control of the same entity including parcels that are not geographically contiguous but managed by the same entity for agricultural production.

"One hundred-year flood plain" means any land area that is subject to one percent or greater chance of flooding in any given year from any source.

"Open burning" means the burning of solid waste materials in an open fire or an outdoor container without providing for the control of combustion or the control of emissions from the combustion.

"Organic feedstocks" means source separated organic materials suitable for vermicomposting, composting, anaerobic digestion, and other processes that transform waste organic materials into usable or marketable materials.

"Organic materials" means any solid waste that is a biological substance of plant or animal origin capable of microbial degradation. Organic materials include, but are not limited to, manure, yard debris, food waste, food processing wastes, wood waste, animal manure, and garden wastes.

"Overburden" means the earth, rock, soil, and topsoil that lie above mineral deposits.

"Permeability" means the ease with which a porous material allows liquid or gaseous fluids to flow through it. For water, this is usually expressed in units of centimeters per second and termed hydraulic conductivity.

"Permit" means an authorization issued by the jurisdictional health department which allows a person to perform solid waste activities at a specific location and which includes specific conditions for such facility operations.

"Person" means an individual, firm, association, copartnership, political subdivision, government agency,

municipality, industry, public or private corporation, or any other entity whatever.

"Physical contaminants" as they relate to incoming feedstocks and compost quality means inorganic and organic constituents that are not readily decomposed during the composting process including, but not limited to, plastics, glass, textiles, rubber, leather, metal, ceramics, rocks, polystyrene, and wood pieces containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate.

"Pile" means any noncontainerized accumulation of solid waste that is used for treatment or storage.

"Plan of operation" means the written plan developed by an owner or operator of a facility detailing how a facility is to be operated during its active life.

"Point of compliance" means a point established in the groundwater by the jurisdictional health department as near a possible source of release as technically, hydrogeologically and geographically feasible.

"Post-closure" means the requirements placed upon disposal facilities after closure to ensure their environmental safety for at least a twenty-year period or until the site becomes stabilized (i.e., little or no settlement, gas production, or leachate generation).

"Post-closure plan" means a written plan developed by an owner or operator of a facility detailing how a facility is to meet the post-closure requirements for the facility.

"Post-consumer food waste" means source separated organic

materials originally intended for human consumption including, but not limited to, vegetables, fruits, grains, meats and dairy products resulting from serving food. Post-consumer food waste is typically collected from cafeterias, homes, and restaurants.

"Preconsumer animal-based wastes" means source separated organic materials from animals such as meat, fat, dairy, or eggs that are a result of food preparation for human consumption or are products that did not reach the intended consumer. Preconsumer animal-based wastes are typically collected from food processing facilities and grocery stores.

"Preconsumer vegetative waste" means source separated organic materials from vegetables, such as pits, peels, and pomace from human food preparation, or vegetable products that did not reach the consumer. Preconsumer vegetative wastes are typically collected from food processing facilities and grocery stores.

"Premises" means a tract or parcel of land with or without habitable buildings.

"Private facility" means a privately owned facility maintained on private property solely for the purpose of managing waste generated by the entity owning the site.

"Processing" means an operation to convert a material into a useful product or to prepare it for reuse, recycling, or disposal.

"Product take-back center" means a retail outlet or distributor that accepts household hazardous waste of comparable types as the products offered for sale or distributed at that outlet.

"Public facility" means a publicly or privately owned facility that accepts solid waste generated by other persons;

"Putrescible waste" means solid waste which contains material capable of being readily decomposed by microorganisms and which is likely to produce offensive odors.

"Pyrolysis" means the process in which solid wastes are heated in an enclosed device in the absence of oxygen to vaporization, producing a hydrocarbon-rich gas capable of being burned for recovery of energy.

"Recyclable materials" means those solid wastes that are separated for recycling or reuse, including, but not limited to, papers, metals, and glass, that are identified as recyclable material pursuant to a local comprehensive solid waste plan.

"Recycling" means transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration. Recycling does not include collection, compacting, repackaging, and sorting for the purpose of transport.

"Representative sample" means a sample that can be expected to exhibit the average properties of the sample source.

"Reserved" means a section having no requirements and which is set aside for future possible rule making as a note to the regulated community.

"Reusable containers" means containers that are used more than once to handle solid waste, such as garbage cans.

"Runoff" means any rainwater, leachate or other liquid that drains over land from any part of the facility.

"Run-on" means any rainwater or other liquid that drains over land onto any part of a facility.

"Scavenging" means the removal of materials at a disposal facility, or intermediate solid waste-handling facility, without the approval of the owner or operator and the jurisdictional health department.

"Seismic impact zone" means an area with a ten percent or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull, will exceed 0.10g in two hundred fifty years.

"Setback" means that part of a facility that lies between the active area and the property boundary.

"Sewage sludge" means solid, semisolid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated.

"Soil amendment" means any substance that is intended to improve the physical characteristics of soil, except composted material, commercial fertilizers, agricultural liming agents, unmanipulated animal manures, unmanipulated vegetable manures, food wastes, food processing wastes, and materials exempted by rule of the department, such as biosolids as defined in chapter 70.95J RCW, Municipal sewage sludge--Biosolids and wastewater, as regulated in chapter 90.48 RCW, Water pollution control.

"Solid waste" or **"wastes"** means all putrescible and

nonputrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

"Solid waste handling" means the management, storage, collection, transportation, treatment, use, processing or final disposal of solid wastes, including the recovery and recycling of materials from solid wastes, the recovery of energy resources from such wastes or the conversion of the energy in such wastes to more useful forms or combinations thereof.

"Solid waste handling unit" means discrete areas of land, sealed surfaces, liner systems, excavations, facility structures, or other appurtenances within a facility used for solid waste handling.

"Source separation" means the separation of different kinds of solid waste at the place where the waste originates.

"Storage" means the holding of solid waste materials for a temporary period.

"Surface impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), and which is designed to hold an accumulation of liquids or sludges. The term includes holding, storage, settling, and aeration pits, ponds, or lagoons, but does not include injection wells.

"Surface water" means all lakes, rivers, ponds, wetlands, streams, inland waters, salt waters and all other surface water and

surface water courses within the jurisdiction of the state of Washington.

"Tank" means a stationary device designed to contain an accumulation of liquid or semisolid materials meeting the definition of solid waste or leachate, and which is constructed primarily of nonearthen materials to provide structural support.

"Throughput" means the amount of feedstocks in tons or cubic yards that a solid waste facility processes in a given amount of time, such as a calendar year. Throughput is identified by the conditions of exemption, the permit, or the plan of operations as approved by the jurisdictional health department or the department.

"Transfer station" means a permanent, fixed, supplemental collection and transportation facility, used by persons and route collection vehicles to deposit collected solid waste from ((~~offsite~~)) off-site into a larger transfer vehicle for transport to a solid waste handling facility.

"Treatment" means the physical, chemical, or biological processing of solid waste to make such solid wastes safer for storage or disposal, amenable for recycling or energy recovery, or reduced in volume.

"Twenty-five-year storm" means a storm of twenty-four hours duration and of such intensity that it has a four percent probability of being equaled or exceeded each year.

((~~**"Type 1 feedstocks"** means source-separated yard and garden wastes, wood wastes, agricultural crop residues, wax-coated cardboard, preconsumer vegetative food wastes, other similar source-separated materials that the jurisdictional health~~

~~department determines to have a comparable low level of risk in hazardous substances, human pathogens, and physical contaminants.~~

~~**"Type 2 feedstocks"** means manure and bedding from herbivorous animals that the jurisdictional health department determines to have a comparable low level of risk in hazardous substances and physical contaminants when compared to a type 1 feedstock.~~

~~**"Type 3 feedstocks"** means meat and postconsumer source-separated food wastes or other similar source-separated materials that the jurisdictional health department determines to have a comparable low level of risk in hazardous substances and physical contaminants, but are likely to have high levels of human pathogens.~~

~~**"Type 4 feedstocks"** means mixed municipal solid wastes, postcollection separated or processed solid wastes, industrial solid wastes, industrial biological treatment sludges, or other similar compostable materials that the jurisdictional health department determines to have a comparable high level of risk in hazardous substances, human pathogens and physical contaminants.~~))

"Universal wastes" means universal wastes as defined in chapter 173-303 WAC, Dangerous waste regulations. Universal wastes include, but may not be limited to, dangerous waste batteries, mercury-containing thermostats, and universal waste lamps generated by fully regulated dangerous waste generators or CESQGs.

"Unstable area" means a location that is susceptible to forces capable of impairing the integrity of the facility's liners, monitoring system or structural components. Unstable areas can include poor foundation conditions and areas susceptible to mass

movements.

"Vadose zone" means that portion of a geologic formation in which soil pores contain some water, the pressure of that water is less than atmospheric pressure, and the formation occurs above the zone of saturation.

"Vector" means a living animal, including, but not limited to, insects, rodents, and birds, which is capable of transmitting an infectious disease from one organism to another.

"Vermicomposting" means the controlled and managed process by which live worms convert organic residues into dark, fertile, granular excrement.

"Waste tires" means any tires that are no longer suitable for their original intended purpose because of wear, damage or defect. Used tires, which were originally intended for use on public highways that are considered unsafe in accordance with RCW 46.37.425, are waste tires. Waste tires also include quantities of used tires that may be suitable for their original intended purpose when mixed with tires considered unsafe per RCW 46.37.425.

"Wetlands" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

"Wood derived fuel" means wood pieces or particles used as a fuel for energy recovery, which contain paint, bonding agents, or creosote. Wood derived fuel does not include wood pieces or particles coated with paint that contains lead or mercury, or wood

treated with other chemical preservatives such as pentachlorophenol, copper naphthanate, or copper-chrome-arsenate.

"Wood waste" means solid waste consisting of wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, construction, demolition, handling and storage of raw materials, trees and stumps. This includes, but is not limited to, sawdust, chips, shavings, bark, pulp, hogged fuel, and log sort yard waste, but does not include wood pieces or particles containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate.

"Yard debris" means plant material commonly created in the course of maintaining yards and gardens and through horticulture, gardening, landscaping or similar activities. Yard debris includes, but is not limited to, grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit, and vegetable garden debris. Yard debris does not include sod (a combination of grass, roots, soil, and rocks) or soil.

"Zone of saturation" means that part of a geologic formation in which soil pores are filled with water and the pressure of that water is equal to or greater than atmospheric pressure.

[Statutory Authority: Chapter 70.95 RCW. 05-11-033 (Order 04-12), § 173-350-100, filed 5/10/05, effective 6/10/05; 03-03-043 (Order 99-24), § 173-350-100, filed 1/10/03, effective 2/10/03.]

AMENDATORY SECTION (Amending Order 99-24, filed 1/10/03, effective 2/10/03)

WAC 173-350-220 Composting facilities. (1) *Composting facilities - Applicability*.

(a) This section ((~~is applicable~~)) applies to all facilities or sites that treat solid waste by composting. This section ((~~is~~)) does not ((~~applicable~~)) apply to:

(i) ((~~Composting used as a treatment for dangerous wastes regulated under chapter 173-303 WAC, Dangerous waste regulation;~~)) Methods of managing organic materials, including composting, or recycling that are excluded from the solid waste handling standards in WAC 173-350-020;

(ii) Composting used as a treatment for ((~~petroleum~~)) contaminated soils regulated under WAC 173-350-320;

(iii) ((~~Treatment of liquid sewage sludge or biosolids in digesters at wastewater treatment facilities regulated under chapter 90.48 RCW, Water pollution control and chapter 70.95J RCW, Municipal sewage sludge--Biosolids;~~

~~(iv) Treatment of other liquid solid wastes in digesters regulated under WAC 173-350-330; and~~)) Anaerobic digesters regulated under WAC 173-350-250, or treatment of other liquid or solid wastes in digesters regulated under WAC 173-350-330;

(iv) Composting of bovine and equine carcasses for producers subject to RCW 70.95.306. Producers that fail to meet the conditions

of RCW 70.95.306 will be required to obtain a solid waste handling permit from the jurisdictional health department and must comply with all other conditions of this chapter; and

(v) Composting biosolids when permitted under chapter 173-308 WAC, Biosolids management, when all of the following conditions are met:

(A) The department and jurisdictional health department agree in writing that a biosolids permit issued by the department will be adequate;

(B) When composting biosolids and other organic wastes together, the conditions of the biosolids permit issued by the department meet or exceed the requirements of this chapter and a solid waste permit is not required; and

(C) The jurisdictional health department does not otherwise find that a local solid waste permit is necessary.

(b) ((~~In accordance with RCW 70.95.305, the operation of the following activities in this subsection are subject solely to the requirements of (c) of this subsection and are~~)) Conditionally exempt facilities composting materials and volumes in Table 220-A must meet the conditions listed in Table 220-A, and (c) of this subsection to be conditionally exempt from solid waste handling permitting. Feedstocks not listed in Table 220-A must be approved by the department and jurisdictional health department. For the purposes of this subsection, "material on-site at any one time" includes feedstocks, active composting, curing piles, and composted materials. An owner or operator that does not comply with the terms and conditions of Table 220-A and (c) of this subsection is required

to obtain a permit from the jurisdictional health department and ((~~shall~~)) must comply with all other applicable requirements of this chapter. ((~~In addition,~~)) Violations of the terms and conditions of Table 220-A and (c) of this subsection may be subject to the penalty provisions of RCW 70.95.315.

((~~(i) Production of substrate used solely on-site to grow mushrooms;~~

~~(ii) Vermicomposting, when used to process Type 1, Type 2, or Type 3 feedstocks generated on-site;~~

~~(iii) Composting of Type 1 or Type 2 feedstocks with a volume limit of forty cubic yards of material on-site at any time. Material on-site includes feedstocks, partially composted feedstocks, and finished compost;~~

~~(iv) Composting of food waste generated on-site and composted in containers designed to prohibit vector attraction and prevent nuisance odor generation. Total volume of the containers shall be limited to ten cubic yards or less;~~

~~(v) Agricultural composting when all the agricultural wastes are generated on-site and all finished compost is used on-site;~~

~~(vi) Agricultural composting when any agricultural wastes are generated offsite, and all finished compost is used on-site, and total volume of material is limited to one thousand cubic yards on-site at any time. Material on-site includes feedstocks, partially composted feedstocks, and finished compost; and~~

~~(vii) Agricultural composting at registered dairies when the composting is a component of a fully certified dairy nutrient management plan as required by chapter 90.64 RCW, Dairy Nutrient~~

~~Management Act.~~

~~(viii) Composting of Type 1 or Type 2 feedstocks when more than forty cubic yards and less than two hundred fifty cubic yards of material is on-site at any one time.~~

~~(ix) Agricultural composting, when any of the finished compost is distributed offsite and when it meets the following requirements:~~

~~(A) More than forty cubic yards, but less than one thousand cubic yards of agricultural waste is on-site at any time; and~~

~~(B) Agricultural composting is managed according to a farm management plan written in conjunction with a conservation district, a qualified engineer, or other agricultural professional able to certify that the plan meets applicable conservation practice standards in the *Washington Field Office Technical Guide* produced by the Natural Resources Conservation Service.~~

~~(x) Vermicomposting when used to process Type 1 or Type 2 feedstocks generated offsite. Total volume of materials is limited to one thousand cubic yards on-site at any one time.~~))

Table 220-A Terms and Conditions for Solid Waste Permit Exemptions

	Organic Materials	Volume	Specific Requirements for Activity or Operation
(1)	✐ Post-consumer food waste ✐ Preconsumer vegetative food waste ✐ Preconsumer animal-based waste ✐ Yard debris ✐ Bulking agents ✐ Manufactured organics	Up to 20 cubic yards of all material on-site at any one time, not to exceed 100 cubic yards processed in a calendar year.	(a) Materials may be generated on-or off-site. Bulking materials such as wood chips may be generated off-site when used as part of the compost process. (b) Active composting must occur in containers designed to prevent vector attraction and nuisance odors.

(2)	✐ Yard debris ✐ Crop residues ✐ Manure and bedding ✐ Bulking agents	Up to 500 cubic yards of material on-site at any one time, not to exceed 2,500 cubic yards processed in a calendar year.	(a) Thirty days prior to operation, facilities managing more than 20 cubic yards of organic materials on-site at any one time must submit a notification of intent to operate as a conditionally exempt composter to the jurisdictional health department and the department. Notice of intent must be submitted on a form provided by the department. (b) Facilities managing more than 20 cubic yards of organic materials on-site at any one time and that distribute composted materials off-site must meet the following conditions: (i) Manage the operation to reduce pathogens as indicated by testing for fecal coliform or salmonella at limits set by Table 220-B; (ii) Conduct compost analysis according to the requirements of Table 220-B. Compost testing frequency is based on volume of compost produced annually as required by subsection (4)(a)(x)(B) of this section; and
			(iii) Submit annual reports and results of composted material analysis to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.
(3)	✐ Agricultural wastes ✐ Yard debris ✐ Bulking agents	✐ Up to 1,000 cubic yards of agricultural wastes and bulking agents on-farm at any one time, and up to 50% of organic materials on-farm can be yard debris.	(a) Agricultural farms managing more than 20 cubic yards of imported yard debris on-site at any one time must meet the following conditions. Thirty days prior to operation, facilities must submit a notification of intent to operate as a conditionally exempt composter to the jurisdictional health department and the department. Notification must be submitted on a form provided by the department; (b) If agricultural farm is only managing agricultural waste and not distributing composted material off farm, then notification in (3)(a)(i) of this table is not required. (c) Agricultural farms managing more than 20 cubic yards of organic materials on-farm at any one time and distributing composted material off-site must meet the following conditions:

			(i) Meet the conditions of (3)(a)(i) of this table; (ii) Manage operation to reduce pathogens as indicated by testing for fecal coliform or salmonella at limits set by Table 220-B of this section; (iii) Conduct compost analysis according to the requirements of Table 220-B. Compost testing frequency is based on volume of compost produced annually as required by subsection (4)(a)(x)(B) of this section; and (iv) Submit annual reports and results of composted material analysis to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.
(4)	✐ Agricultural wastes ✐ Bulking agents	No limits when only agricultural wastes and bulking agents are processed on-farm.	(a) For composting at a dairy, composting must occur as part of an updated dairy nutrient management plan as required by chapter 90.64 RCW, Dairy Nutrient Management Act. (b) For composting at a farm other than a dairy, composting must occur as part of an updated farm management plan written in conjunction with a conservation district, a qualified engineer, or other agricultural professional able to certify that the plan meets applicable conservation practice standards in the USDA *Washington Field Office Technical Guide*, Code 317, produced by the Natural Resources Conservation Service. (c) Facilities managing more than 20 cubic yards of organic materials on-farm at any one time and distributing composted material off farm must meet the following conditions: (i) Thirty days prior to operation, facilities must submit a notification of intent to operate as a conditionally exempt composter to the jurisdictional health department and the department. Notification must be submitted on a form provided by the department; (ii) Manage the operation to reduce pathogens as indicated by testing for fecal coliform or salmonella at limits set by Table 220-B of this section;

			(iii) Conduct compost analysis according to the requirements of Table 220-B. Compost testing frequency is based on volume of compost produced annually as required by subsection (4)(a)(x)(B) of this section; and (iv) Submit annual reports and results of composted material analysis to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.

(c) Composting operations managing the types and volumes of materials identified in ((~~subsection (b) shall be managed according to~~)) Table 220-A must meet the following terms and conditions to maintain their exempt status:

(i) Comply with the performance standards of WAC 173-350-040;

(ii) ((~~Protect surface water and groundwater through the use of best management practices and all known available and reasonable methods of prevention, control, and treatment as appropriate. This includes, but is not limited to, setbacks from wells, surface waters, property lines, roads, public access areas, and site-specific setbacks when appropriate;~~)) Manage the operation to prevent the migration of agricultural pests identified by local horticultural pest and disease control boards, as applicable;

(iii) Control nuisance odors to prevent migration beyond property boundaries;

(iv) Manage the operation to prevent attraction of flies, rodents, and other vectors;

(v) ((~~Conduct an annual analysis, prepared in accordance with the requirements of subsection (4)(a)(viii) of this section, for composted material that is distributed offsite from categorically~~

~~exempt facilities described in subsection (1)(b)(vii) through (ix) of this section.~~)) Ensure that at least fifty percent of the composted material on-site is used within one year and composted material is not stockpiled for more than three years;

(vi) Prepare and submit an annual report to the department and the jurisdictional health department by April 1st of each calendar year for ((~~categorically~~)) exempt facilities ((~~described~~)) as required in ((~~subsection (1)(b)(vii) through (ix) of this section. Annual reports are not required for facilities operating under the permit exemption provided in (b)(vii) of this subsection if the composted material is not distributed offsite~~)) Table 220-A. The annual report ((~~shall~~)) must be on forms supplied by the department and ((~~shall~~)) must detail facility activities during the previous calendar year and ((~~shall~~)) must include the following information:

(A) Name and address of the facility;

(B) Calendar year covered by the report;

(C) Annual quantity and type of feedstocks received and compost produced, in cubic yards or tons;

(D) Annual quantity of composted material sold or distributed, in cubic yards or tons;

(E) Results of the annual analysis of composted material required by ((~~subsection (1)(c)(v) of this section~~)) Table 220-A; and

(F) Any additional information required by written notification of the department((~~.~~)); and

(vii) Allow the department or the jurisdictional health department to inspect the site at reasonable times((~~;~~

~~(viii) For activities under (b)(viii) through (x) of this subsection, and registered dairies where compost is distributed offsite, the department and jurisdictional health department shall be notified in writing thirty days prior to beginning any composting activity. Notification shall include name of owner or operator, location of composting operation and identification of feedstocks~~)).

(2) *Composting facilities - Location standards* *(permit requirements)*. There are no specific location standards for composting facilities subject to this chapter; however, composting facilities must meet the requirements ((~~provided~~)) of other federal, state, or local laws and regulations that apply under WAC 173-350-040(5).

Note: When considering compost facility location, please review the U.S. Department of Transportation Federal Aviation Advisory Circular. No. 150/5200-33B 2007.

(3) *Composting facilities - Design standards* *(permit requirements)*. ((~~The owner or operator of a composting facility shall prepare engineering reports/plans and specifications, including a construction quality assurance plan, to address the design standards of this subsection. Scale drawings of the facility including the location and size of feedstock and finished product storage areas, compost processing areas, fixed equipment, buildings, leachate collection devices, access roads and other appurtenant facilities; and design specifications for compost pads, storm water run-on prevention system, and leachate collection and conveyance systems shall be provided. All composting facilities shall be designed and constructed to meet the following requirements:~~

~~(a) When necessary to provide public access, all-weather roads~~

~~shall be provided from the public highway or roads to and within the compost facility and shall be designed and maintained to prevent traffic congestion, traffic hazards, dust and noise pollution;~~

~~(b) Composting facilities shall separate storm water from leachate by designing storm water run-on prevention systems, which may include covered areas (roofs), diversion swales, ditches or other designs to divert storm water from areas of feedstock preparation, active composting and curing;~~

~~(c) Composting facilities shall collect any leachate generated from areas of feedstock preparation, active composting and curing. The leachate shall be conveyed to a leachate holding pond, tank or other containment structure. The leachate holding structure shall be of adequate capacity to collect the amount of leachate generated, and the volume calculations shall be based on the facility design, monthly water balance, and precipitation data. Leachate holding ponds and tanks shall be designed according to the following:~~

~~(i) For leachate ponds at registered dairies, the design and installation shall meet Natural Resources Conservation Service standards for a waste storage facility in the *Washington Field Office Technical Guide*.~~

~~(ii) For leachate ponds at composting facilities other than registered dairies, the pond shall be designed to meet the following requirements:~~

~~(A) Have a liner consisting of a minimum 30-mil thickness geomembrane overlying a structurally stable foundation to support the liners and the contents of the impoundment. High density polyethylene geomembranes used as primary liners or leak detection~~

~~liners shall be at least 60-mil thick to allow for proper welding. The jurisdictional health department may approve the use of alternative designs if the owner or operator can demonstrate during the permitting process that the proposed design will prevent migration of solid waste constituents or leachate into the ground or surface waters at least as effectively as the liners described in this subsection;~~

~~(B) Have dikes and slopes designed to maintain their structural integrity under conditions of a leaking liner and capable of withstanding erosion from wave action, overfilling, or precipitation;~~

~~(C) Have freeboard equal to or greater than eighteen inches to avoid overtopping from wave action, overfilling, or precipitation. The jurisdictional health department may reduce the freeboard requirement provided that other engineering controls are in place which prevent overtopping. These engineering controls shall be specified during the permitting process;~~

~~(D) Leachate ponds that have the potential to impound more than ten-acre feet (three million two hundred fifty-nine thousand gallons) of liquid measured from the top of the dike and which would be released by a failure of the containment dike shall be reviewed and approved by the dam safety section of the department.~~

~~(iii) Tanks used to store leachate shall meet design standards in WAC 173-350-330 (3)(b).~~

~~(d) Composting facilities shall be designed with process parameters and management procedures that promote an aerobic composting process. This requirement is not intended to mandate~~

~~forced aeration or any other specific composting technology. This requirement is meant to ensure that compost facility designers take into account porosity, nutrient balance, pile oxygen, pile moisture, pile temperature, and retention time of composting when designing a facility.~~

~~(e) Incoming feedstocks, active composting, and curing materials shall be placed on compost pads that meet the following requirements:~~

~~(i) All compost pads shall be curbed or graded in a manner to prevent ponding, run-on and runoff, and direct all leachate to collection devices. Design calculations shall be based upon the volume of water resulting from a twenty-five-year storm event as defined in WAC 173-350-100;~~

~~(ii) All compost pads shall be constructed over soils that are competent to support the weight of the pad and the proposed composting materials;~~

~~(iii) The entire surface area of the compost pad shall maintain its integrity under any machinery used for composting activities at the facility; and~~

~~(iv) The compost pad shall be constructed of materials such as concrete (with sealed joints), asphaltic concrete, or soil cement to prevent subsurface soil and groundwater contamination;~~

~~(v) The jurisdictional health department may approve other materials for compost pad construction if the permit applicant is able to demonstrate that the compost pad will meet the requirements of this subsection.~~)) Composting facilities must be designed and constructed to meet the requirements of this subsection.

(a) Composting facilities must be designed and constructed such that:

(i) The facility can be operated to meet the performance standard requirements in WAC 173-350-040; and

(ii) The facility can be operated to promote controlled, aerobic decomposition. This requirement is intended to ensure that compost facility designers take into account porosity, nutrient balance, pile oxygen, pile moisture, pile temperature, and retention time of composting when designing a facility. It is not intended to mandate force aeration or any other specific composting technology.

(b) The owner or operator of a composting facility must prepare and provide to the jurisdictional health department engineering reports, plans, and specifications that address the design standards of this subsection. The reports, plans, and specifications must be prepared by an engineer licensed in the state of Washington, and must include:

(i) An engineering report that presents the design basis and calculations for the engineered features of the facility including, but not limited to: Pad, impoundments, storm water management features, leachate management features, and aeration and emission control features as required by the permitting air authority where applicable. The engineering report must demonstrate that the proposed design will meet the performance standards of this chapter;

(ii) Scale drawings of the facility including the location and size of feedstock and composted material storage areas, compost processing areas, fixed equipment, buildings, storm water management features where applicable, access roads, and other constructed areas

and buildings integral to facility operation;

(iii) Design specifications for the engineered features of the facility including, but not limited to, pads, storm water management features, leachate management features, and aeration and emission management features as required by a permitting air authority where applicable; and

(iv) A construction quality assurance plan that describes monitoring, testing, and documentation procedures that will be performed during construction of the facility to ensure the facility is constructed in accordance with the approved design.

(c) When operations require public access, all-weather roads must be provided from the highway or roads to and within the compost facility and must be designed and maintained to prevent traffic congestion, traffic hazards, dust, and noise pollution.

(d) Compost facilities must manage storm water and leachate to meet the standards of this section and of any federal, state, and local water, and air quality permits.

(e) Composting facilities must minimize the production of leachate and runoff by designing storm water management features such as run-on prevention systems, which may include covered areas (roofs), diversion swales, ditches, or other features designed to divert storm water from areas of feedstock preparation, active composting, and curing.

(i) Composting facilities must manage any leachate generated at the facility by providing leachate management features. The leachate management features include, but are not limited to, leachate collection, conveyance, and storage structures, or

treatment systems. Leachate must be collected from areas of feedstock preparation, active composting, and curing, and be conveyed to a leachate storage structure or treatment system. Any discharges to ground that result in contaminants migrating to groundwater require a waste discharge permit under chapter 90.48 RCW, Water pollution control, prior to discharge. Discharges to ground that result in degradation of groundwater quality are prohibited under chapter 90.48 RCW, Water pollution control. Any discharge to sanitary sewer requires additional permitting by the local delegated authority or department;

(ii) Storm water and leachate collection and conveyance structures must be designed based on the volume of water resulting from a twenty-five-year storm event as defined in WAC 173-350-100;

(iii) Leachate storage structures such as ponds or tanks must be of adequate capacity to store the normal maximum volume of leachate generated by the facility. The normal maximum volume will be established based on the following conditions:

(A) Facility design;

(B) Normal climatic precipitation and evaporation data for the location of the facility;

(C) Monthly leachate reuse or removal; and

(D) A factor of safety to accommodate variability of actual conditions from normal conditions.

(iv) Leachate holding ponds and tanks must be designed according to the following:

(A) Leachate ponds at registered dairies must meet Natural Resources Conservation Service standards for a waste storage

facility in the 2001 (revised June 2011) *Washington Field Office Technical Guide* (Code 313).

(B) Leachate ponds at composting facilities other than registered dairies must be designed to meet the following requirements:

(I) Have a liner consisting of a minimum 30-mil thickness geomembrane on a subgrade that provides sufficient bearing capacity to support the liner and the contents of the pond. A liner constructed with a high density polyethylene geomembrane must be at least 60-mil thick to allow for proper welding. The jurisdictional health department may approve the use of an alternative liner design if the owner or operator can demonstrate during the permitting process that the proposed design will prevent migration of solid waste constituents or leachate into the ground or surface waters at least as effectively as the liners described in this subsection;

(II) Have dikes and slopes designed to maintain their structural integrity under conditions of a leaking liner and capable of withstanding erosion from wave action, overfilling, or precipitation;

(III) Have freeboard (distance between the liquid level and the top of the pond) equal to or greater than eighteen inches to avoid overtopping from wave action, overfilling, or precipitation. The jurisdictional health department may reduce the freeboard requirement provided that other engineering controls are in place that prevent overtopping. These engineering controls must be specified during the permitting process; and

(IV) Leachate ponds that have the potential to impound more than

ten-acre feet (three million two hundred fifty-nine thousand gallons) of liquid measured from the top of the dike and which would be released by a failure of the containment dike must be reviewed and approved by the dam safety section of the department.

(C) Tanks used to store leachate must meet design standards in WAC 173-350-330 (3)(b).

(f) Incoming feedstocks, active composting, and curing materials must be placed on pads that prevent contamination of soil or groundwater underlying or adjacent to the pads. Pads must meet the following requirements:

(i) All pads must be curbed or graded in a manner to prevent ponding, to control run-on and runoff, and to separately collect and convey all storm water and leachate to separate storage or holding systems. Storm water that is combined with leachate must be managed as leachate in accordance with this section;

(ii) All pads must be constructed on subgrades that provide sufficient bearing capacity to support the weight of the pad, the materials placed on them, and the equipment used in handling the materials;

(iii) The entire surface area of the pad must be designed to maintain its structural and hydraulic integrity against loads resulting from any machinery used for feedstock and compost handling activities, and from surface wear or damage caused by feedstock and compost handling, or by active composting at the facility;

(iv) The pad may be constructed of materials such as concrete (with sealed joints), asphaltic concrete, or soil cement that prevents subsurface soil and groundwater contamination;

(v) The jurisdictional health department may allow pads for compost facilities to be designed and constructed with materials other than those listed in (f)(iv) of this subsection, provided the applicant demonstrates in the engineering report to the jurisdictional health department's and the department's satisfaction that the alternative pad provides sufficient protection to meet the performance standards of this section and of WAC 173-350-040.

(4) *Composting facilities - Operating standards (permit requirements)*. The owner or operator of a composting facility ((~~shall~~)) must:

(a) Operate the facility to:

(i) Control air contaminants such as dust((~~,~~)) and nuisance odors((~~, and~~)) to prevent other contaminants ((~~to prevent migration of air contaminants~~)) from migrating beyond property boundaries in accordance with WAC 173-350-040(4);

(ii) Prevent the attraction of vectors;

(iii) ((~~Ensure that only feedstocks identified in the approved plan of operation are accepted at the facility;~~)) Prevent the migration of agricultural pests identified by local pest and disease control boards, as applicable;

(iv) Ensure ((~~the facility operates under the supervision and control of a properly trained individual during all hours of operation, and~~)) access to the facility is restricted when the facility is closed;

(v) ((~~Ensure facility employees are trained in appropriate facility operations, maintenance procedures, and safety and~~

~~emergency procedures according to individual job duties and according to an approved plan of operation;~~

~~(vi) Implement and document pathogen reduction activities when Type 2, 3 or 4 feedstocks are composted. Documentation shall include compost pile temperature and notation of turning as appropriate, based on the composting method used. Pathogen reduction activities shall at a minimum include the following:~~

~~(A) In vessel composting - the temperature of the active compost pile shall be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for three days; or~~

~~(B) Aerated static pile - the temperature of the active compost pile shall be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for three days; or~~

~~(C) Windrow composting - the temperature of the active compost pile shall be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for fifteen days or longer. During the period when the compost is maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher, there shall be a minimum of five turnings of the windrow; or~~

~~(D) An alternative method that can be demonstrated by the owner or operator to achieve an equivalent reduction of human pathogens;~~

~~(vii) Monitor the composting process according to the plan of operation submitted during the permitting process. Monitoring shall include inspection of incoming loads of feedstocks and pathogen reduction requirements of (a)(vi) of this subsection; and~~

~~(viii) Analyze composted material for:~~

~~(A) Metals in Table A at the minimum frequency listed in Table C. Compost facilities composting only Type 1 and Type 2 feedstocks are not required to test for molybdenum and selenium. Testing frequency is based on the feedstock type and the volume of feedstocks processed per year;~~

~~(B) Parameters in Table B at the minimum frequency listed in Table C. Testing frequency is based on the feedstock type and the volume of feedstocks processed per year;~~

~~(C) Nitrogen content at the minimum frequency listed in Table C; and~~

~~(D) Biological stability as outlined in United States Composting Council Test Methods for the Examination of Composting and Compost at the minimum frequency listed in Table C;~~

~~(E) The jurisdictional health department may require testing of additional metal or contaminants, and/or modify the frequency of testing based on historical data for a particular facility, to appropriately evaluate the composted material.~~)) Ensure that only feedstocks identified in the approved plan of operation are accepted at the facility;

(vi) Ensure the facility operates under the supervision and control of a properly trained individual(s) during all hours of operation:

(A) Facility supervisors responsible for daily operation must receive training, or be able to document prior training, in the basics of composting within the first year of supervising the facility. Training must consist of classroom and hands-on course work and conclude with a certificate of completion that must be kept on-site

at all times. Appropriate compost training can be obtained through organizations such as the Washington organic recycling council, the Solid Waste Association of North America, the U.S. Composting Council, or other training as approved by the jurisdictional health department.

(B) Ensure facility employees are trained in appropriate facility operations, maintenance procedures, and safety and emergency procedures according to individual job duties and according to an approved plan of operation. A trained supervisor may provide appropriate training to employees responsible for daily operations.

(vii) Implement and document pathogen reduction activities. Documentation must include compost pile temperatures representative of the composting materials, and notation of turnings as appropriate, based on the composting method used. Pathogen reduction activities must at a minimum include the following:

(A) In vessel composting - The temperature of the active compost pile must be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for three consecutive days (seventy-two hours); or

(B) Aerated static pile must have a cover to ensure that pathogen reduction temperatures are reached and vectors are controlled - The temperature of the active compost pile must be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for three consecutive days (seventy-two hours); or

(C) Windrow composting - The temperature of the active compost

pile must be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for fifteen days or longer. During the period when the compost is maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher, there must be a minimum of five turnings of the windrow; or

(D) An alternative method of composting that can be demonstrated by the owner or operator to achieve an equivalent reduction of human pathogens.

(viii) Monitor the composting process according to the plan of operation submitted during the permitting process. Monitoring must include inspection of incoming loads of feedstocks and pathogen reduction requirements of (a)(vii) of this subsection;

(ix) Collect composted material samples for analysis that are representative of the pile. Use a sampling method such as described in the U.S. Composting Council 2002 Test Methods for the Examination of Composting and Compost, Method 02.01-A through E, or as specified; and

(x) Analyze composted material for metals and other testing parameters listed in Table 220-B.

(A) The jurisdictional health department may require additional tests for metals and contaminants;

(B) Testing frequency is based on amount of composted material produced. A representative sample of composted material must be tested for every 5,000 cubic yards produced, or every three hundred sixty-five days, whichever is more frequent. The jurisdictional health department may modify the frequency of testing based on historical data for a particular facility;

(C) Composted material meeting the conditions of subsection (4)(a)(x) and (g)of this section can be stored off of a pad.

Table ((~~A - Metals~~)) 220-B Testing Parameters

Metals and other testing parameters	**Limit (mg/kg dry weight), unless otherwise specified**
Arsenic	((<=)) ≤ 20 ppm
Cadmium	((<=)) ≤ 10 ppm
Copper	((<=)) ≤ 750 ppm
Lead	((<=)) ≤ 150 ppm
Mercury	((<=)) ≤ 8 ppm
Molybdenum((+))	((<=)) ≤ 9 ppm
Nickel	((<=)) ≤ 210 ppm
Selenium((+))	((<=)) ≤ 18 ppm
Zinc	((<=)) ≤ 1400 ppm
Total Nitrogen	No limits
Physical contaminants	< 1 percent by weight total, not to exceed .10 percent film plastic
Sharps	0
Electrical conductivity	No range
Carbon to nitrogen ratio	No range
Moisture at 70°C	No range
Organic matter	No range
pH	5 - 10 (range)
Biological stability	Moderately unstable to very stable
Fecal coliform[1]	< 1,000 Most Probable Number per gram of total solids (dry weight)
OR	
Salmonella	< 3 Most Probable Number per 4 grams of total solids (dry weight)

[1]((~~Not required for composted material made from Type 1, Type 2 or a mixture of Type 1 and Type 2 feedstocks.~~)) Test

for either fecal coliform or salmonella.

Note: Biosolids composters regulated under this chapter must communicate with the jurisdictional health department to determine if different testing parameters and testing frequencies are required.

((~~Table B - Other Testing Parameters~~

~~**Parameter**~~	~~**Limit**~~
~~Manufactured Inerts~~	~~< 1 percent~~
~~Sharps~~	~~0~~
~~pH~~	~~5 - 10 (range)~~
~~Fecal Coliform~~	~~< 1,000 Most Probable Number per gram of total solids (dry weight).~~
~~Salmonella~~	~~< 3 Most Probable Number per 4 grams of total solids (dry weight).~~

~~Table C - Frequency of Testing Based on Feedstocks Received~~

~~**Feedstock Type**~~	~~**< 5,000 cubic yards**~~	~~**= or > 5,000 cubic yards**~~
~~Type 1 - or Type 2~~	~~Once per year~~	~~Every 10,000 cubic yards or every six months whichever is more frequent~~
~~Type 3~~	~~Once per quarter (four times per year)~~	~~Every 5,000 cubic yards or every other month whichever is more frequent~~
~~Type 4~~	~~Every 1,000 cubic yards~~	~~Every 1,000 cubic yards or once per month whichever is more frequent~~))

(b) Inspect the facility to prevent malfunctions and deterioration, operator errors and discharges((~~, which~~)) that may cause or lead to the release of waste to the environment or a threat to human health. Inspections ((~~shall~~)) must be conducted at least weekly, unless an alternate schedule is approved by the jurisdictional health department as part of the permitting process.

(c) For compost facilities with leachate holding ponds, conduct regular liner inspections at least once every five years, unless an alternate schedule is approved by the jurisdictional health department as part of the permitting process. The frequency of inspections ((~~shall~~)) must be specified in the operations plan and ((~~shall~~)) must be based on the type of liner, expected service life of the material, and the site-specific service conditions((~~. The jurisdictional health department shall be given sufficient notice and have the opportunity to be present during liner inspections. An inspection log or summary shall be kept at the facility or other convenient location if permanent office facilities are not on-site, for at least five years from the date of inspection. Inspection records shall be available to the jurisdictional health department upon request.~~

~~(c) Maintain daily operating records of the following~~)):

(i) ((~~Temperatures and compost pile turnings for Type 2, Type 3 and Type 4 feedstocks;~~

~~(ii) Additional process monitoring data as prescribed in the plan of operation; and~~

~~(iii) Results of laboratory analyses for composted materials as required in (a)(viii) of this subsection. Facility inspection~~

~~reports shall be maintained in the operating record. Significant deviations from the plan of operation shall be noted in the operating record. Records shall be kept for a minimum of five years and shall be available upon request by the jurisdictional health department.~~

~~(d) Prepare and submit a copy of an annual report to the jurisdictional health department and the department by April 1st on forms supplied by the department. The annual report shall detail the facility's activities during the previous calendar year and shall include the following information:~~

~~(i) Name and address of the facility;~~

~~(ii) Calendar year covered by the report;~~

~~(iii) Annual quantity and type of feedstocks received and compost produced, in tons;~~

~~(iv) Annual quantity of composted material sold or distributed, in tons;~~

~~(v) Annual summary of laboratory analyses of composted material; and~~

~~(vi) Any additional information required by the jurisdictional health department as a condition of the permit.~~

~~(e) Develop, keep and abide by a plan of operation approved as part of the permitting process. The plan of operation shall convey to site personnel the concept of operation intended by the designer. The plan of operation shall be available for inspection at the request of the jurisdictional health department. If necessary, the plan shall be modified with the approval, or at the direction of the jurisdictional health department. Each plan of operation shall include the following:~~

~~(i) List of feedstocks to be composted, including a general description of the source of feedstocks;~~

~~(ii) A description of how wastes are to be handled on-site during the facility's active life including:~~

~~(A) Acceptance criteria that will be applied to the feedstocks;~~

~~(B) Procedures for ensuring that only the waste described will be accepted;~~

~~(C) Procedures for handling unacceptable wastes;~~

~~(D) Mass balance calculations for feedstocks and amendments to determine an acceptable mix of materials for efficient decomposition;~~

~~(E) Material flow plan describing general procedures to manage all materials on-site from incoming feedstock to finished product;~~

~~(F) A description of equipment, including equipment to add water to compost as necessary;~~

~~(G) Process monitoring plan, including temperature, moisture, and porosity;~~

~~(H) Pathogen reduction plan for facilities that accept Type 2, Type 3, and Type 4 feedstocks;~~

~~(I) Sampling and analysis plan for the final product;~~

~~(J) Nuisance odor management plan (air quality control plan);~~

~~(K) Leachate management plan, including monthly water balance; and~~

~~(L) Storm water management plan;~~

~~(iii) A description of how equipment, structures and other systems are to be inspected and maintained, including the frequency of inspections and inspection logs;~~

~~(iv) A neighbor relations plan describing how the owner or operator will manage complaints;~~

~~(v) Safety, fire and emergency plans;~~

~~(vi) Forms for recordkeeping of daily weights or volumes of incoming feedstocks by type and finished compost product, and process monitoring results; and~~

~~(xvii) Other such details to demonstrate that the facility will be operated in accordance with this subsection and as required by the jurisdictional health department.~~)) Inspect the liner for degradation and ruptures of the liner material and for failure of any seams or joints in the liner material. If the maximum wetted extent of the liner geomembrane cannot be directly inspected visually, then the liner must be tested for leaks by electrical leak detection survey methods. If leaks, degradation, or ruptures of the liner material are detected, the liner must be repaired; and

(ii) The jurisdictional health department must be given sufficient notice and have the opportunity to be present during liner inspections. An inspection record must be kept at the facility or other convenient location if permanent office facilities are not on-site, for at least five years from the date of inspection. Inspection records must be available to the jurisdictional health department upon request.

(d) Maintain operating records of the following:

(i) Daily temperatures representative of compost piles;

(ii) Additional process monitoring data as prescribed in the plan of operation;

(iii) Results of analyses for composted materials as required

in (a)(x) of this subsection and Table 220-B; and

(iv) Facility inspection reports must be maintained in the operating record. Significant deviations from the plan of operation must be noted in the operating record. Records must be kept for a minimum of five years and must be available upon request by the jurisdictional health department.

(e) Prepare and submit a copy of an annual report to the jurisdictional health department and the department by April 1st of each calendar year on forms provided by the department. The annual report must detail the facility's activities during the previous calendar year and must include the following information:

(i) Name and address of the facility;

(ii) Calendar year covered by the report;

(iii) Annual quantity and type of feedstocks received and compost produced, in cubic yards or tons;

(iv) Annual quantity of composted material sold or distributed, in cubic yards or tons;

(v) Annual summary of laboratory analysis of composted material; and

(vi) Any additional information required by the jurisdictional health department as a condition of the permit.

(f) Develop, keep, and follow a plan of operation approved as part of the permitting process. The plan of operation must convey to site personnel the concept of operation intended by the designer. The plan of operation must be kept on-site and be available for inspection at the request of the jurisdictional health department. If necessary, the plan must be modified with the approval, or at the

direction of the jurisdictional health department. Each plan of operation must include the following:

(i) List of feedstocks to be composted, including a general description of the source of feedstocks. Feedstocks must be approved by the department or jurisdictional health department;

(ii) A plan to control air contaminants such as dust and nuisance odors to prevent contaminants from migrating beyond property boundaries in accordance with WAC 173-350-040(4), including:

(A) A plan to document nuisance odor complaints should they arise. The plan must include date and time of complaints, weather conditions, and operations at the facility at the time of the complaint;

(B) A progressive odor management plan that must include a description of facility and operational improvements that could be made if nuisance odors are identified beyond the facility's property boundary, as determined by the jurisdictional health department, the department, or the air authority. The description must address the receiving, composting, curing, and storage areas of the facility. Facilities will have eighteen months after the effective date of this chapter to complete the progressive odor management section of their plan of operation;

(C) A description of facility maintenance activities that encompass nuisance odor prevention and control, such as acquiring critical odor control backup equipment in the event of a breakdown, a schedule for purging aeration lines and changing biofilter media as appropriate, and a schedule for cleaning leachate ponds or leachate storage tanks as appropriate; and

(D) A description of how feedstocks with high moisture or the potential for high odors will be managed to reduce nuisance odors upon receipt, and through the composting process.

(iii) A description of how wastes and organic materials including incoming feedstocks, composting, curing, and composted materials are to be handled on-site during the facility's active life, including:

(A) Maximum capacity in cubic yards for all materials on-site at any one time. The jurisdictional health department may require cumulative capacity for materials or separate capacities for incoming feedstocks, composting, curing, and composted materials, or any combination;

(B) Throughput in tons or cubic yards of solid waste feedstocks processed in a given amount of time. The jurisdictional health department may require monthly or annual throughput;

(C) Procedures and criteria for ensuring that only the feedstocks described will be accepted. This includes a plan for rejecting feedstocks contaminated with greater than five percent physical contaminants by volume, or a plan to accept and separate contaminated loads from noncontaminated loads, and reduce physical contaminants to an acceptable level prior to composting;

(D) Procedure to reduce physical contaminants in composted material to meet testing parameters in Table 220-B. Grinding to reduce the size of physical contaminants does not meet the requirements of this section;

(E) Procedures for handling unacceptable wastes;

(F) Mass balance calculations for feedstocks and amendments to

determine an acceptable mix of materials for efficient decomposition;

(G) Material flow plan describing general procedures to manage all materials on-site from incoming feedstock to composted material;

(H) A description of equipment, including equipment to add water to compost as necessary;

(I) Compost process monitoring plan, including compost mix (carbon to nitrogen ratio), temperature, moisture, and porosity;

(J) Pathogen reduction plan;

(K) Representative sampling and analysis plan for the composted material such as described in the 2002 U.S. Composting Council Test Methods for the Examination of Composting and Compost Method 02.01-A through E;

(L) Leachate management plan, including monthly precipitation and evaporation data, and if applicable, monthly leachate reuse or removal; and

(M) Storm water management plan.

(iv) A description of how equipment, structures, and other systems are to be inspected and maintained, including the frequency of inspections and inspection logs;

(v) A description of how facility staff will receive appropriate training in the operation of the facility, including how they will be trained to identify nuisance odors and how to correct them;

(vi) A community relations plan describing how the owner or operator will document and manage complaints;

(vii) Safety, fire, and emergency plans;

(viii) Forms for recordkeeping of daily volumes or weights of

incoming feedstocks by type, outgoing composted material, and process monitoring results; and

(ix) Other details to demonstrate that the facility will be operated in accordance with this subsection and as required by the jurisdictional health department.

(g) Manage composted material piles that have met the testing parameters in Table 220-B in the following manner:

(i) Comply with the performance standards of WAC 173-350-040; and

(ii) Minimize and control runoff from composted material piles through the use of covers, diversion swales, berms, ditches, or other features designed to prevent runoff and divert storm water from compost material; and

(iii) Minimize odor by maintaining porosity of composted material piles and managing moisture levels in composted material piles, not to exceed sixty percent moisture.

(5) *Composting facilities - Groundwater monitoring requirements (permit requirements)*. There are no specific groundwater monitoring requirements for composting facilities subject to this chapter; however, composting facilities must meet the requirements ((~~provided~~)) of other federal, state, or local laws and regulations that apply under WAC 173-350-040(5).

(6) *Composting facilities - Closure requirements* (permit requirements). The owner or operator of a composting facility ((~~shall~~)) must:

(a) Notify the jurisdictional health department sixty days in advance of closure. At closure, the facility owner or operator is

financially responsible for the removal of all solid waste, including but not limited to, raw or partially composted feedstocks, composted material and leachate from the facility ((~~shall be removed~~)). The materials must be sent to another facility that ((~~conforms~~)) complies with the applicable regulations for handling the waste.

(b) Develop, keep, and ((~~abide by~~)) follow a closure plan approved by the jurisdictional health department as part of the permitting process. At a minimum, the closure plan ((~~shall~~)) must include methods of removing solid waste, leachate, and other organic materials from the facility. For planning purposes, assume that the facility is at full, permitted capacity at the time of closure.

(7) *Composting facilities - Financial assurance requirements (permit requirements)*. There are no specific financial assurance requirements for composting facilities subject to this chapter; however, composting facilities must meet the requirements ((~~provided~~)) of other federal, state, or local laws and regulations that apply under WAC 173-350-040(5).

(8) *Composting facilities - Permit application contents* (permit requirements). The owner or operator of a composting facility ((~~shall~~)) must obtain a solid waste permit from the jurisdictional health department. All applications for permits ((~~shall~~)) must be submitted in accordance with the procedures established in WAC 173-350-710. In addition to the requirements of WAC 173-350-710 and 173-350-715, each application for a permit ((~~shall~~)) must contain:

(a) Engineering reports((~~/~~)), plans, and specifications that address the design standards of subsection (3) of this section;

(b) A plan of operation meeting the requirements of subsection

(4) of this section; and

(c) A closure plan meeting the requirements of subsection (6) of this section.

(9) *Composting facilities - Construction records (permit requirements)*. Within thirty days of completing construction, the owner or operator of a composting facility ((~~shall~~)) must provide copies of the construction record drawings for engineered facilities at the site and a report documenting facility construction, including the results of observations and testing carried out as part of the construction quality assurance plan, to the jurisdictional health department and the department. Facilities ((~~shall~~)) must not ((~~commence operation~~)) begin operating until the jurisdictional health department has determined that the construction was completed in accordance with the approved engineering report((~~/~~)), plans, and specifications and has approved the construction documentation in writing.

(10) *Composting facilities - Designation of composted materials (permit requirements).* When used on-site or distributed off-site, composted materials meeting the ((~~limits for metals in Table A and the~~)) testing parameters of Table 220-B ((~~of this section, and having a stability rating of very stable, stable, or moderately unstable as determined by the analysis required in subsection (4)(a)(viii)(D) of this section, shall no longer be considered a solid waste and shall~~)) are no longer ((~~be~~)) subject to this chapter. Composted materials that do not meet these ((~~limits are still considered solid waste and~~)) requirements are subject to management under chapter 70.95 RCW, Solid waste management--Reduction and

recycling.

[Statutory Authority: Chapter 70.95 RCW. 03-03-043 (Order 99-24), § 173-350-220, filed 1/10/03, effective 2/10/03.]

NEW SECTION

WAC 173-350-225 Other organic material handling activities. (1) In accordance with RCW 70.95.305, activities identified in this section are exempt from solid waste handling permitting when in compliance with the terms and conditions of this section. Any person engaged in the activities in this section that does not comply with the terms and conditions of this section is required to obtain a permit from the jurisdictional health department in accordance with the requirements of WAC 173-350-490. In addition, violations of the terms and conditions of this subsection may be subject to the penalty provisions of RCW 70.95.315.

Table 225-A Terms and Conditions for Solid Waste Permit Exemptions

	Organic Materials	Volume	Specific Requirements for Activity or Operation
(1)	✐ Postconsumer food waste ✐ Preconsumer vegetative food waste ✐ Preconsumer animal-based waste ✐ Yard debris ✐ Crop residues ✐ Manure and bedding ✐ Bulking agents	Up to 20 cubic yards of material generated on- or off-site, or up to 1000 cubic yards of material generated on-site at any one time.	Facilities must be managed to promote vermicomposting, and: (a) Thirty days prior to operation, facilities managing more than 20 cubic yards of organic materials on-site at any one time must submit a notification of intent to operate as a conditionally exempt vermicomposter to the jurisdictional health department and the department. Notice of intent must be submitted on a form provided by the department. (b) Facilities managing more than 20 cubic yards of organic materials on-site at any one time and that distribute materials off-site must submit annual reports to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.
(2)	✐ Preconsumer vegetative food waste ✐ Yard debris ✐ Crop residues ✐ Manure and bedding	Up to 1000 cubic yards of material on-site at any one time.	Facilities must be managed to promote vermicomposting, and: (a) Thirty days prior to operation, facilities managing more than 20 cubic yards of organic materials on-site at any one time must submit a notification of intent to operate as a conditionally exempt vermicomposter to the jurisdictional health department and the department. Notice of intent must be submitted on a form provided by the department.

	✐ Bulking agents		(b) Facilities managing more than 20 cubic yards of organic materials on-site at any one time and that distribute materials off-site must submit annual reports to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.
(3)	✐ Postconsumer food waste ✐ Preconsumer vegetative food waste ✐ Preconsumer animal-based waste ✐ Yard debris ✐ Crop residues ✐ Manure and bedding ✐ Bulking agents	Other conversion technologies managing up to 3000 gallons of liquid or semi-solid organic feedstocks on-site at any one time, when individual tanks or enclosed vessels have a capacity of ≮ 1000 gallons or 20 cubic yards of nonliquid organic feedstocks on-site at any one time.	Other conversion technologies managing more than 1000 gallons liquid or semi-solid or 10 cubic yards of nonliquid material must meet the following conditions: (a) Tanks used must comply with at least one of the following design conditions: (i) Surface impoundment and tank standards, WAC 173-350-330; or (ii) Other engineered design that the owner or operator can demonstrate complies with the conditions of WAC 173-350-040, and is approved by the department. (b) Thirty days prior to operation, facilities must submit a notification of intent to operate as a conditionally exempt facility to the jurisdictional health department and the department. Notification must be submitted on a form provided by the department. (c) Submit annual reports to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department. (d) For material being distributed off-site, the following conditions apply: (i) Sample and test material every 5,000 cubic yards or twice yearly, whichever is more frequent, to demonstrate it meets compost quality standards of WAC 173-350-220(4) (Table 220-B) before it is distributed for off-site use; or (ii) Ensure material meets the conditions for a commercial fertilizer as applicable in chapter 15.54 RCW; or (iii) Send material to a compliant permitted or conditionally exempt compost facility for further treatment to meet compost quality standards; or (iv) Land apply material in accordance with WAC 173-350-230, Land application; or (v) Use material in accordance with WAC 173-350-200, Beneficial use permit exemption; or (vi) Process or manage material in an alternate manner approved by the department or the jurisdictional health department.

	(4)	✐ Postconsumer food waste ✐ Preconsumer vegetative food waste ✐ Preconsumer animal-based waste ✐ Other organic materials	No limits for other conversion technologies or appliances that are used or installed at a customer/generator site for the purposes of producing a saleable product from source separated organic materials and which generate no solid waste residual.	Derived product materials may not remain on site for more than thirty days; Conversion technology and derived product materials do not pose a risk of: i) nuisance odors beyond the boundary of the property; ii) a risk of gas releases or explosion fueled by gases produced by anaerobic microbes; or iii) a risk of waste discharges from abandoned or improperly managed facilities; The conversion technology continuously monitors for pH, aeration, and vessel leakage. Conversion technologies managing more than 10,000 gallons of liquid or semi-solid or 20 cubic yards of non-liquid material on a particular site must meet the following conditions: (a) Tanks used must comply with at least one of the following design conditions: (i) Surface impoundment and tank standards, WAC 173-350-330; or (ii) Other engineered design that the owner or operator can demonstrate complies with the conditions of WAC 173-350-040, and is approved by the department. (b) Thirty days prior to operation, facilities must submit a notification of intent to operate as a conditionally exempt facility to the jurisdictional health department and the department. Notification must be submitted on a form provided by the department. (c) Submit annual reports to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department. (d) For material being distributed off-site, the following conditions apply: (i) Sample and test material every 5,000 cubic yards or twice yearly, whichever is more frequent, to demonstrate it meets compost quality standards of WAC 173-350-220(4) (Table 220-B) before it is distributed for off-site use; or (ii) Ensure material meets the conditions for a commercial fertilizer as applicable in chapter 15.54 RCW; or (iii) Send material to a compliant permitted or conditionally exempt compost facility for further treatment to meet compost quality standards; or (iv) Land apply material in accordance with WAC 173-350-230, Land application; or (v) Use material in accordance with WAC 173-350-200, Beneficial use permit exemption; or (vi) Process or manage material in an alternate manner approved by the department or the jurisdictional health department.

(2) Facilities managing under the rules and volumes of material described in Table 225-A above are conditionally exempt facilities when they meet the following conditions:

(a) Comply with the performance standards, WAC 173-350-040;

(b) Manage the operation to prevent attraction of flies, rodents, and other vectors;

(c) Control nuisance odors to prevent migration beyond property boundaries; and

(d) Manage the operation to prevent the migration of agricultural pests identified by local horticultural pest and disease control boards, as applicable.

[]

NEW SECTION

WAC 173-350-250 Anaerobic digesters. (1) *Anaerobic digesters - Applicability.* This section applies to all facilities or sites that treat solid waste by anaerobic digestion, except (a), (b), and (c) of this subsection:

(a) Storage or treatment of solid or liquid wastes in surface impoundments or tanks regulated under WAC 173-350-330;

(b) Anaerobic digesters regulated in accordance with chapter 90.48 RCW, Water pollution control; and

(c) Anaerobic digesters regulated in accordance with chapter

173-308 WAC, Biosolids management.

(2) *Anaerobic digester - Permit exemptions.* In accordance with RCW 70.95.305, anaerobic digester facilities processing the types and volumes of materials identified in Table 250-A are subject solely to the requirements of Table 250-A and (b) of this subsection and are exempt from solid waste handling permitting. Feedstocks not listed in Table 250-A must be approved by the department. Violations of the terms and conditions of Table 250-A and (b) of this subsection may be subject to penalty provisions of RCW 70.95.315.

(a) An owner or operator that does not comply with the terms and conditions of Table 250-A and (b) of this subsection must:

✐ Obtain a solid waste handling permit from the jurisdictional health department; and

✐ Comply with all applicable requirements of this chapter.

Table 250-A Terms and Conditions for Exemptions

	Feedstocks	**Volumes**	**Conditions**
(1)	Livestock manure; organic feedstocks. May include livestock manure that is imported, which means originating off of the farm or site where the anaerobic digester is being operated. For the purposes of this exemption (Table 250-A (1)), organic feedstocks do not include materials collected from municipal, commercial, or residential solid waste collection programs.	No limits when livestock manure is at least 50% of total feedstocks volume, and imported, nonmanure organic feedstocks are not greater than 30% of total feedstock volume.	(a) All imported organic feedstocks must be fed into the anaerobic digester within 36 hours; (b) All organic materials must be received and stored in a structure(s) that:

			(i) Complies with the Natural Resources Conservation Service's Practice Standard Code 313 in effect as of July 26, 2009, or other approved storage construction standard approved by the department or the jurisdictional health department; (ii) Is certified by a representative of the Natural Resources Conservation Service to be effective at protecting surface and groundwater; or (iii) Meets applicable construction industry standards adopted by the American Concrete Institute or the American Institute of Steel Construction in effect as of July 26, 2009; and (iv) Prevents migration of nuisance odors beyond property boundaries and minimizes attraction of flies, rodents, and other vectors; (c) All imported organic materials must be preconsumer; (d) If imported organic feedstocks are likely to contain animal by-products, they must be previously source separated at a facility licensed to process food by the United States Department of Agriculture, the United States Food and Drug Administration, the Washington state department of agriculture, or other applicable regulatory agency;

			(e) If imported organic feedstock contains bovine processing waste, it must be derived from animals approved by the United States Department of Agriculture Food Safety and Inspection Service and not contain any specified risk material, defined as: Skull, brain, trigeminal ganglia (nerves attached to brain and close to the skull exterior), eyes, spinal cord, distal ileum (a part of the small intestine), and the dorsal root ganglia (nerves attached to the spinal cord and close to the vertebral column) of cattle aged 30 months or older; (f) Imported organic feedstocks cannot contain sheep carcasses or sheep processing waste; (g) The anaerobic digester must be designed and operated in accordance with standards in the Natural Resources Conservation Service's Conservation Practice Standard, Code 366, in effect as of July 26, 2009; (h) Digestate must: (i) Be managed in accordance with a dairy nutrient management plan under chapter 90.64 RCW or a farm management plan developed under the Natural Resource Conservation Service's conservation planning process, that includes elements addressing management and use of digestate; or (ii) Meet compost quality standards of WAC 173-350-220 for pathogens, stability, nutrient testing, metals and other testing before it is distributed for off-site use, or be sent to an off-site permitted compost facility for further treatment to meet compost quality standards; or

			(iii) Be processed or managed in an alternate manner approved by the department. The owner or operator must submit an annual report to the department and the jurisdictional health department reporting the volume of nonmanure material in the anaerobic digester, and test results of digested fiber as described in Table 250-A (1)(h)(ii). Annual reports must be submitted on forms provided by the department and are due April 1st of each calendar year; (i) Digestate that is managed in accordance with the dairy nutrient management plan under chapter 90.64 RCW, or a farm management plan developed under the Natural Resource Conservation Service's conservation planning process, is no longer a solid waste when those plans include elements addressing management and use of digestate.
(2)	✐ Post-consumer food waste ✐ Preconsumer vegetative food waste ✐ Preconsumer animal-based waste ✐ Yard debris	3,000 gallons of liquid or semi-solid organic feedstocks on-site at any one time, when individual tanks have a capacity of ≥ 1,000 gallons, or 20 cubic yards of nonliquid organic feedstocks on-site at any one time.	(a) The anaerobic digester design must comply with at least one of the following three conditions: (i) Design and operating standards in the Natural Resources Conservation Service's Washington Conservation Practice Standard, Anaerobic Digester Code 366 in effect October 2010, or as specified by the department; or (ii) Surface impoundment and tank standards, WAC 173-350-330; or (iii) Other engineered design that the owner or operator can demonstrate complies with the conditions of WAC 173-350-040, and is approved by the department.

			(b) For facilities managing more than 1000 gallons or 10 cubic yards on-site at any one time, and if organic materials are received from off-site, the owner or operator must submit an annual report to the department and the jurisdictional health department. Annual reports must be on forms provided by the department and are due April 1st of each calendar year. The annual report must detail the facility's activities during the previous calendar year and must include: (i) Annual quantity in cubic yards or gallons, and type of feedstocks received; (ii) Annual quantity in cubic yards or gallons of digestate distributed if applicable; (iii) Annual summary of digestate analysis if digestate is distributed off-site; and (iv) Any additional information required by the department or the jurisdictional health department. (c) For digestate (solids, semi-solids or liquids) being distributed off-site, the following conditions apply: (i) Sample and test digestate solids every 5,000 cubic yards or twice yearly, whichever is more frequent, to demonstrate it meets compost quality standards of WAC 173-350-220(4) (Table 220-B) before it is distributed for off-site use; or (ii) Ensure digestate liquids or nonseparated digestate meets the conditions for a commercial fertilizer as applicable in chapter 15.54 RCW; or (iii) Send digestate to a compliant permitted or conditionally exempt compost facility for further treatment to meet compost quality standards; or (iv) Land apply digestate in accordance with WAC 173-350-230, Land application; or

			(v) Use digestate in accordance with WAC 173-350-200, Beneficial use permit exemptions; or (vi) Process or manage digestate in an alternate manner approved by the department or the jurisdictional health department.

(b) The owner or operator of an anaerobic digester in compliance with all of the conditions of Table 250-A must also meet all of the following conditions in order to maintain exempt status:

(i) Receive, handle, and store all organic materials in a manner that complies with WAC 173-350-040, Performance standards;

(ii) Allow inspections by the department and/or jurisdictional health department at reasonable times to verify compliance with the conditions specified in this subsection;

(iii) Manage the operation to prevent the attraction of flies, rodents, and other vectors; and

(iv) Manage the operation to prevent the migration of agricultural pests identified by local horticultural pest and disease control boards, as applicable.

(v) For facilities managing more than 1000 gallons or 10 cubic yards on-site at any one time, notify the department and jurisdictional health department thirty days prior to operation. Notification must be on forms supplied by the department.

(3) *Anaerobic digester - Location standards (permit requirements)*. There are no specific location standards for anaerobic digesters subject to this chapter; however, anaerobic digesters must meet the requirements of other federal, state, or local laws and regulations that apply under WAC 173-350-040(5).

Note: When considering anaerobic digestion facility location, please review the U.S. Department of Transportation Federal Aviation Advisory Circular No. 150/5200-33B. 2007.

(4) *Anaerobic digester - Design standards (permit requirements).* Anaerobic digesters must be designed such that the facility can be operated to meet the performance standard requirements in WAC 173-350-040. The owner or operator of an anaerobic digester facility must:

(a) Prepare and provide to the jurisdictional health department engineering reports, plans, specifications, and a construction quality assurance plan that address the standards of this subsection. The reports, plans, and specifications must be prepared by an engineer licensed in the state of Washington and must include:

(i) An engineering report that presents the design basis and calculations for the engineered features of the facility including, but not limited to, pads, impoundments, leachate management features (if applicable), digestate management features, storm water management features, and anaerobic digester features. The engineering report must demonstrate that the proposed design will meet the performance standards of this chapter;

(ii) Scale drawings of the facility including the location and size of feedstock storage areas, fixed equipment, buildings, leachate management features (if applicable), digestate management features, storm water management features, access road and other constructed areas, and buildings integral to facility operation;

(iii) Design specifications for the engineered features of the facility including, but not limited to, pads, storm water management features, leachate management features (if applicable), digestate

management features, and an anaerobic digester design that demonstrates all structures, containers, tanks, and/or surface impoundments will meet the requirements of this section, and of any federal, state, or local water and air quality permits; and

(iv) A construction quality assurance plan that describes monitoring, testing and documentation procedures that must be performed during construction of the facility to ensure the facility is constructed in accordance with the approved design.

(b) Provide all weather roads from the public highway to and within the facility when operations require public access. Roads must be designed and maintained to prevent traffic congestion, traffic hazards, dust and noise pollution.

(c) Design waste receiving areas, digesters, digestate management features, storm water, and leachate management features (if applicable), to prevent contamination of air, soil, surface water, and groundwater.

(i) Feedstock, leachate (if applicable), and digestate receiving and storage areas must either be in tanks or surface impoundments meeting the requirements of this section, or be on pads to prevent contamination of air, soil, surface water, and groundwater underlying or adjacent to receiving and storage areas;

(ii) Pads must meet the following requirements:

(A) All pads must be curbed or graded in a manner to prevent ponding, control run-on and runoff, and separately collect and convey all storm water and leachate to separate storage or holding systems. Storm water that is combined with leachate must be treated as leachate in accordance with this section;

(B) All pads must be constructed on subgrades that provide sufficient bearing capacity to support the weight of the pad, the materials placed on them, and the equipment used in handling the materials;

(C) The entire surface area of the pad must be designed to maintain its structural and hydraulic integrity against loads resulting from feedstock and digestate storage, machinery used for feedstock handling, and against surface wear or damage caused by feedstock and digestate handling and storage;

(D) The pad may be constructed of materials such as concrete (with sealed joints) or asphaltic concrete that prevents subsurface soil and groundwater contamination; and

(E) The jurisdictional health department may allow pads to be designed and constructed with materials other than those listed in (c)(ii)(D) of this subsection, provided the applicant demonstrates in the engineering report to the jurisdictional health department's satisfaction that the alternative pad provides sufficient protection to meet the performance standards of this section and of WAC 173-350-040.

(iii) The anaerobic digester design must comply with one of the following three conditions:

(A) Design criteria in the Natural Resources Conservation Service's Washington Conservation Practice Standard, Anaerobic Digester Code 366 in effect October 2010, or other effective date as specified by the department; or

(B) Surface impoundment and tank design standards, WAC 173-350-330(3); or

(C) Other engineered design that the owner or operator can demonstrate complies with the conditions of WAC 173-350-040 to the jurisdictional health department's and the department's satisfaction. Written consent from the jurisdictional health department and the department constitutes approval.

(iv) Storm water management features must divert storm water from feedstock receiving and storage areas, and from digestate collection and storage areas. Features may include, but are not limited to, run-on prevention systems, berms, diversion swales, ditches, and other features;

(v) Leachate management features may include, but are not limited to, runoff prevention systems, leachate collection, conveyance, storage structures, and treatment systems;

(vi) Leachate (if applicable) must be contained or collected. Any discharges to ground that result in contaminants migrating to groundwater require a waste discharge permit under chapter 90.48 RCW, Water pollution control, prior to discharge. Discharges to ground that result in degradation of groundwater quality are prohibited under chapter 90.48 RCW, Water pollution control. Any discharge to sanitary sewer requires additional permitting by the local delegated authority or department;

(vii) Leachate ponds or tanks, or digestate liquid storage in ponds or tanks must meet one of the following conditions:

(A) Ponds must meet Natural Resources Conservation Service Standard for a waste storage facility in the 2001 *Washington Field Office Technical Guide 313* (revised June 2011); or

(B) Ponds must have a liner consisting of a minimum 30-mil

thickness geomembrane on a subgrade that provides sufficient bearing capacity to support the liner and the contents of the pond. A liner constructed with a high density polyethylene geomembrane must be at least 60-mil thick to allow for proper welding; and

(I) Have dikes and slopes designed to maintain their structural integrity under conditions of a leaking liner and capable of withstanding erosion from wave action, overfilling, or precipitation; and

(II) Have freeboard (distance between the liquid level and the top of the pond) equal to or greater than eighteen inches to avoid overtopping from wave action, overfilling, or precipitation. The jurisdictional health department may reduce the freeboard requirement provided that other engineering controls are in place that prevent overtopping. These engineering controls must be specified during the permitting process; or

(C) The jurisdictional health department may approve the use of an alternative liner design if the owner or operator can demonstrate during the permitting process that the proposed design will prevent migration of solid waste constituents or leachate into the ground or surface waters at least as effectively as the liners described in this subsection; or

(D) Tanks used to store leachate or digestate liquid must meet design standards in WAC 173-350-330 (3)(b).

(viii) Leachate ponds and digestate liquid storage that have the potential to impound more than 10-acre feet (three million two hundred fifty-nine thousand gallons) of liquid measured from the top of the dike and that would be released by a failure of the containment

dike must be reviewed and approved by the department's dam safety section.

(5) *Anaerobic digester - Operating standards (permit requirements).* The owner or operator of an anaerobic digester must operate in compliance with the performance standards of WAC 173-350-040 or Natural Resource Conservation Service Practice Standard Code 366 as applicable, and:

(a) Operate the facility to:

(i) Control air contaminants, such as dust and nuisance odors, to prevent these and other contaminants from migrating beyond property boundaries;

(ii) Prevent the attraction of vectors;

(iii) Prevent the migration of agricultural pests identified by the local horticultural pest and disease control boards as applicable;

(iv) Confine organic materials prior to and after processing to specifically designated areas, meeting the applicable standards of this section;

(v) Ensure that dangerous waste is not accepted, treated, or stored;

(vi) Ensure the facility operates under the supervision and control of a properly trained individual during hours of operation when facility staffing is required;

(vii) Ensure facility employees are trained in appropriate facility operations, maintenance procedures, and safety and emergency procedures according to individual job duties and according to an approved plan of operation; and

(viii) Restrict access to the facility when the facility is closed.

(b) Inspect the facility to prevent malfunctions and deterioration, operator errors, and discharges that may lead to the release of wastes to the environment or cause a threat to human health. The owner or operator must conduct these inspections as needed, but at least weekly, unless an alternate schedule is approved by the jurisdictional health department as part of the permitting process.

(c) Maintain operating records of the following:

(i) Process monitoring data as described in the plan of operation;

(ii) The quantity in gallons or cubic yards, and types of feedstocks received;

(iii) Results of analysis for digestate that is sold or distributed, according to subsection (5)(e) of this section; and

(iv) Facility inspection reports. Significant deviations from the plan of operation must be noted in the operating record. Records must be kept for a minimum of five years and must be available upon request by the jurisdictional health department.

(d) Prepare and submit a copy of an annual report to the jurisdictional health department and the department by April 1st of each calendar year for activities during the previous calendar year. Annual reports must be submitted on forms provided by the department and must include:

(i) Annual quantity and type of feedstocks received;

(ii) Annual quantity of digestate distributed if applicable;

(iii) Annual summary of digestate analysis as applicable, if digestate is distributed off-site; and

(iv) Any additional information required by the department or the jurisdictional health department.

(e) If distributing digestate (solids, semi-solids, or liquids) off-site, produce and manage the product so that it does not harm human health or the environment; and:

(i) Test representative samples of digestate solids every 5,000 cubic yards to demonstrate it meets compost quality standards in WAC 173-350-220(4) (Table 220-B). An alternate testing frequency may be required or approved by the jurisdictional health department; or

(ii) Ensure digestate meets the conditions for a commercial fertilizer as applicable in chapter 15.54 RCW; or

(iii) Send digestate to a permitted compost facility for further processing; or

(iv) Land apply digestate in accordance with WAC 173-350-230, Land application; or

(v) Use digestate in accordance with WAC 173-350-200, Beneficial use permit exemption; or

(vi) Apply digestate on agricultural lands at agronomic rates in accordance with a dairy nutrient management plan or a nutrient management plan; or

(vii) Manage digestate in an alternate manner as approved by the jurisdictional health department and the department.

(f) Develop, keep, and abide by a plan of operation approved as part of the permitting process. The plan must describe the facility's operation and must convey to site operating personnel the

concept of operation intended by the facility designer. The plan of operation must be kept on-site and available for inspection at the request of the jurisdictional health department. When necessary, the plan must be modified with the approval, or at the direction of the jurisdictional health department. Each plan of operation must include the following:

(i) A description of the types of feedstocks to be handled at the facility. Feedstocks must be approved by the department or jurisdictional health department;

(ii) Procedures for ensuring that only feedstocks described will be accepted;

(iii) Procedures for handling unacceptable wastes;

(iv) A plan for processing digestate to meet the requirements of (e) of this subsection, if distributing digestate off-site;

(v) A nutrient management plan for agricultural lands and farm lands (as described in RCW 84.34.020) if using digestate on-site;

(vi) A description of how facility staff will be appropriately trained;

(vii) A calculation of monthly capacity based on maximum volume (cubic yards or gallons) of all materials on-site at any one time. All materials on-site include feedstocks, digesting materials and digestate;

(viii) A material flow plan describing general procedures to manage all materials on-site. All materials on-site include incoming feedstock, digesting materials, and digestate;

(ix) An odor management plan including, but not limited to, the following components:

(A) Methods for treating emissions to reduce odors, if any;

(B) A community relations plan to address odor issues should they arise; and

(C) A description of facility and operational improvements that could be made, if nuisance odors are identified beyond the facility's property boundary, as determined by the jurisdictional health department, the department, or the permitting air authority. The description of operational improvements must address feedstock receiving, processing, and digestate storage areas of the facility.

(x) A description of how equipment, structures, and other systems will be inspected and maintained, including frequency of inspection and inspection logs. This description must include, but is not limited to:

(A) The groundwater monitoring system, if required;

(B) The overfilling prevention equipment, including details of filling and emptying techniques;

(C) The liners of surface impoundments and tanks, tank piping, and secondary containment, as applicable.

(xi) Safety, fire, and emergency plans including a spill prevention/response plan;

(xii) The forms used to record volumes (in cubic yards or gallons) of accepted feedstocks; and

(xiii) Other such details to demonstrate that the facility is operated in accordance with this chapter and as required by the jurisdictional health department.

(6) *Anaerobic digester - Groundwater monitoring requirements (permit requirements).* There are no specific groundwater

monitoring requirements for anaerobic digestion facilities subject to this chapter; however, anaerobic digestion facilities must meet the requirements of other federal, state, or local laws and regulations that apply under WAC 173-350-040(5).

(7) *Anaerobic digester - Closure requirements.* The owner or operator of an anaerobic digester facility must:

(a) Develop, keep, and follow a closure plan approved by the jurisdictional health department as part of the permitting process. At a minimum, the closure plan must include removing all organic materials, including digestate, from the facility. For planning purposes, assume the facility is at full permitted capacity when it is closed;

(b) Notify the jurisdictional health department sixty days in advance of closure. At closure, the facility is financially responsible for the removal of all organic materials including, but not limited to, raw or partially digested feedstocks, and digestate from the facility. The materials must be sent to another facility that complies with the applicable regulations for handling the waste.

(8) *Anaerobic digester - Financial assurance requirements (permit requirements).* There are no specific financial assurance requirements for anaerobic digestion facilities subject to this chapter; however, anaerobic digestion facilities must meet the requirements of other federal, state, or local laws and regulations that apply under WAC 173-350-040(5).

(9) *Anaerobic digester - Permit application contents (permit requirements).* The owner or operator of an anaerobic digestion facility not exempt under subsection (2) of this section must obtain

a solid waste permit from the jurisdictional health department. All applications for permits must be in accordance with the procedures established in WAC 173-350-710. In addition to the requirements of WAC 173-350-710 and 173-350-715, each permit application must contain:

(a) Engineering reports, plans, and specifications that address the design standards of subsection (4) of this section;

(b) A plan of operation that addresses the requirements of subsection (5) of this section; and

(c) A closure plan meeting the requirements of subsection (7) of this section.

(10) *Anaerobic digester - Construction records (permit requirements).* Facilities must not start operation until the jurisdictional health department has determined that the construction was completed in accordance with the approved engineering report, plans, and specifications and has approved the construction documentation in writing and issued a permit. Within thirty days of completing construction, the owner or operator of an anaerobic digestion facility must provide the following materials to the jurisdictional health department and the department:

(a) Copies of the construction record drawings for engineered facilities at the site; and

(b) A report documenting facility construction, including the results of observations and testing carried out as part of the construction quality assurance plan.

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WASHINGTON REFUSE & RECYCLING ASSOCIATION

November 2, 2012

Washington State
Department of Ecology
ATTN: Kyle Dorsey
Waste 2 Resources Program
PO Box 47600
Olympia, WA 98504-7600

Re: Chap. 173-350 WAC Solid Waste Handling Standards

Dear Mr. Dorsey:

Please consider the following to be "Comments" on behalf of the Washington Refuse and Recycling Association (WRRA) as requested by the Department of Ecology (DOE) in the "Rule Proposal Notice" published in September 2012.

First, please be aware that WRRA's comments will not be technical in nature. Several of our member companies will submit comments which directly address the technical specifics of these proposals, and we trust that those comments will be thoroughly reviewed by DOE staff members with similar expertise, as those who submit the comments. Rather, our comments will be more general.

WRRA is appreciative of the time and effort DOE staff has put into this project. This is not an easy subject to master and the dedication and professionalism of the people at DOE is always apparent, and is to be applauded, both by our industry and the consumer. That being said, in all frankness, I am compelled to say that the public hearing I attended in Bellevue held on this proposal was lacking in definitive explanations and answers. There were simply far too many "I don't knows," and/or "we have to check on that" to convince the audience that this proposal is ready for adoption.

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http//www.wrra.org

WRRA understands that both the original project "lead person" and "rule process" person have both left the Department before the project's completion. This has been a setback to the industry as well as the department. Yet, it is not an excuse for the lack of answers or clarification that is needed at this critical juncture. This gap leaves too many questions unanswered as to this proposals intent and language. If the rulemaking has to be delayed because key personnel are no longer available, so be it. It is better to use some extra time to allow the newly assigned personnel to get "up to speed" than to forge ahead with obvious gaps in the proposal.

Hopefully, comments from stakeholders and consumers will help to clarify the issues here and be of value to the Department as we proceed.

Our comments can be summarized as follows:

- DOE should move ahead with the rulemaking that pertains to anaerobic digestion;
- DOE should not proceed with the rulemaking that pertains to composting;
- DOE should reconsider its Small Business Economic Impact Statement and Preliminary Cost-Benefit and Least Burdensome Alternative Analyses; and
- DOE should not attempt to regulate finished products under WAC 173-350.

DOE should move ahead with the rulemaking that pertains to anaerobic digestion.

WRRA believes that the sections dealing with anaerobic digestion meet the criteria for exemption to the Governor's Executive Order on Rulemaking.

WRRA Members have not raised specific concerns with the proposal language dealing with anaerobic digestion. WRRA believes that rules for these facilities should be strengthened and not weakened, exemptions from current solid waste handling rules be kept to a minimum and that any adopted amendments protect environmental and human health that is likewise provided for throughout WAC 173-350.

DOE should not move ahead with the rulemaking that pertains to composting.

WRRA does not believe that the sections dealing with composting, new definitions and standards, meet the criteria for exemption to the Governor's Executive Order on Rulemaking. Further, we do not believe the proposed changes have been fully vetted with the industry members (generators, collection companies and composters). We believe that the need to clarify definitions (i.e., capacity, physical contaminants and yard waste) is reason enough to allow more time to reach a consensus proposal that is clear to the industry and provides enforceable language for the regulators

WRRA and its members certainly understand and appreciate the complex issues associated with composting, not the least of which are safety (for our employees and the consumer) and odors which are the byproduct of the composting process. WRRA and its member companies have worked hard in cooperation with DOE and our local health districts over many years to deal with these problems, and we believe strongly that these efforts have been successful.

We believe that the odor issues are at least in part a result of the rush to get all organics, including food wastes, out of the landfills by 2012. We believe that further research, some of which is occurring at this time and guidance on the odor issues is required; and further discussions held on whether or not all organics should be diverted in all cases, should be convened with the affected local governments and facilities.

The obvious key is to research and institute measures which not only protect the environment and public health and safety, but also allow for an end use product that is useful and affordable. That is one of, if not the primary, goals of recycling, and we firmly support it. We would not want to see any unnecessary regulation that would adversely impact that goal.

Issues clarifying Odor Management Plans, and the roles and authorities of the regulating agencies remain unclear and unsettled at least in the minds of industry members.

DOE should reconsider its economic impact statement and the cost benefit analysis.

The cost to generators, collection companies, composters and the consumer and the benefits should be reexamined in light of the comments it has received from industry members throughout the development of this proposal. Over the

last 5 years, over 25% of the compost facilities have closed and we believe that the proposed regulations could lead to even more closures upon implementation, which would defeat the very purpose of these amendments.

These costs far exceed those reflected in the current cost benefit analysis which covers the proposed changes.

DOE should not regulate finished products under WAC 173-350.

WRRA does not believe that the sections dealing with composting products, meet the criteria for exemption to the Governor's Executive Order on Rulemaking and would not have been granted permission to proceed had this element been fully disclosed. This rule proposal is an overextension of DOE's regulatory authority to the finished product, which goes beyond regulation of "solid waste."

Our specific concerns are relative to what may be an effort to "regulate" a finished product, such as garden mulch. That is, the Department seems to be proposing regulation of on-site storage of the finished product. This product is no longer solid waste, nor a "recyclable;" it is a consumer item which will be shipped directly to the consumer, or to a retailer or wholesaler. At that point, it is beyond DOE's regulatory purview, and extension of that authority would not only be contrary to applicable laws and regulations, but would create an unwanted and unnecessary increase in price to the consumer.

Again, our individual members who are directly involved in this aspect of the industry will submit more detailed comments which address the technical issues involved here.

Thank you for the opportunity to comment on this proposal, and for the time and energy your staff has obviously invested in the project. We have confidence that the finished product will reflect that hard work and provide continued critical support for the future of environmentally and economically sustainable recycling in our state.

Very truly yours,

WASHINGTON REFUSE AND RECYCLING ASSOCIATION

Brad Lovaas

Brad Lovaas
Executive Director

October 19, 2012

Mr. Kyle Dorsey
Washington State Department of Ecology
Waste 2 Resources Program
P.O. Box 47600
Olympia, WA 98504-7600

RE: Comments on Proposed Amendments to Chapter 173-350 WAC

Dear Mr. Dorsey,

Thank you for this opportunity to comment on the proposed amendments to Chapter 173-350 WAC, *Solid Waste Handling Standards.*

As a King County community that offers weekly residential curbside collection of yard and food waste in addition to the regular collection of multifamily and commercial organics, the City of Kirkland and its rate payers have a keen, fundamental interest in ensuring that our regional composting facilities have adequate capacity to accept all of the organic material we generate; divert all of the organic material collected from the landfill by processing the organics into a high quality, saleable compost; and offer this composting service at a reasonable cost to their regional partners.

In reviewing the proposed amendments to Chapter 173-350 WAC, we believe that some of the proposed revisions and amendments to the WAC may not adequately support the fundamental interests that I previously described.

Comment #1 – WAC 173-350-030 Effective Date
The shortened timelines required to comply with the provisions of the proposed amendments appear to be unnecessarily onerous and could result in increased collection and processing costs passed on to customers in the form of higher tipping fees as the owners of composting facilities hire additional staff or reassign existing staff to comply with the expedited compliance requirements. We recommend that the Department of Ecology collaborate with composting facilities to establish a more reasonable set of timelines.

Comment #2 – WAC 173-350-100 Definitions – "Capacity"
We contend that "composted materials" should be struck from the definition of "Capacity". Due to unforeseen economic forces, there may be periods when composters are unable to meet their sales targets and have no other alternative other than to stockpile finished product. If stock piled finished compost is included in the calculation of the total amount of material that can be contained on a given site, the ability for a composting facility to accept unprocessed feed stocks from the region's residents and businesses will be accordingly reduced or even periodically eliminated.

Comment #3 – WAC 173-350-100 Definitions – "Physical contaminants"
We contend that "rocks" should be struck from the definition of Physical Contaminants. Contrary to the definition of "Contaminant", rocks do occur naturally in the environment.

Comment #4 – WAC 173-350-220 Composting Facilities (c) (V)
It is unclear why a facility must ensure that ..."composted material is not stockpiled for more than three years." Compost is a material which clearly improves with age and the potential that this desirable material could be landfilled by composting facilities after the expiration of the three year time limit is a serious concern.

Comment #5 – Table 220B Testing Parameters
The limit of less than one percent (1%) of physical contamination by weight total, not to exceed one tenth of one percent (.10%) film plastic standard is unreasonable. Municipal feed stocks, in particular commercial and multifamily organics, can at times contain significant amounts of physical contaminants, particularly film plastics. While composting facilities are equipped to screen out most contamination, the fact remains that despite all best efforts and intentions, finished compost will include some degree of film plastic contamination higher than .10%. If this reduced threshold of allowable film plastic contamination is adopted to replace the national standard of no greater than 1% for all man-made inerts as required in the *Standard Specifications for Compost for Erosion/Sediment Control (2003)*, we believe that a large percentage of our municipal organic waste is at risk of being landfilled and not composted.

Secondarily and as noted above in Comment #3, including rocks as Physical Contaminants will serve only push a given quantity of compost over the allowed limit given their natural density and weight. As noted above, rocks are naturally occurring constituents of compost and should not be included in the definition of "Physical Contaminants".

Thanks again for the opportunity to comment. If you have any questions, please don't hesitate to contact me at my office at (425) 587-3804 or by email at jmacgillivray@kirklandwa.gov.

Sincerely yours,
PUBLIC WORKS

John MacGillivray
Solid Waste Programs Lead
City of Kirkland

Dorsey, Kyle (ECY)

From: McCoy, Rep. John [John.McCoy@leg.wa.gov]
Sent: Thursday, September 27, 2012 11:35 PM
To: Dorsey, Kyle (ECY)
Cc: Dunshee, Rep. Hans; Sells, Rep. Mike; Waite, Brooke
Subject: Re: Proposed Rule for WAC 173-350 WAC Solid Waste Handling Standards

Follow Up Flag: Follow up
Flag Status: Completed

Have you looked into the Cedar Grove issues in Maple Valley and Smith Island in Snohomish County?

Sent from my iPad2

On Sep 27, 2012, at 14:27, "Dorsey, Kyle (ECY)" <kdor461@ECY.WA.GOV<mailto:kdor461@ECY.WA.GOV>> wrote:

Hello, the notice below has been distributed to stakeholders on our ListServ. Chery Sullivan, our longtime Compost Specialist has moved on to the Department of Agriculture. I am working to notify all stakeholders regarding rule developments, and your name and e-mail were on a list which Chery maintained of people and organizations that might be interested in the rule. Some of you may have already received this information. I encourage you to join the ListServ if you are interested in solid waste management rule development at all. Subscribers can't post, so there is not a lot of traffic, and it is the best way to stay informed. It's very easy from the link below. The notice follows.
Hello, Ecology has published proposed amendments to Chapter 173-350 WAC - Solid Waste Handling Standards. The focus of the amendments is around composting, anaerobic digestion, and other methods of converting organic waste to products. The proposed amendments, related documents, and information on public hearings and opportunity for comment can be found on our web pages at http://www.ecy.wa.gov/programs/swfa/rules/rule350.html.
The Rule Proposal Notice is attached and provides a summary along with information on hearings and comment opportunities.
If you represent an organization or publication, please consider sharing this message and information with your constituents or subscribers.
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Kyle Dorsey
Rules and Policy Specialist
Washington State Department of Ecology
Waste 2 Resources Program
360-407-6559
kyle.dorsey@ecy.wa.gov<mailto:kyle.dorsey@ecy.wa.gov>

<Chapter 173-350 WAC Rule Proposal Notice Final.pdf>

King County

Solid Waste Division
Department of Natural Resources and Parks
King Street Center
201 South Jackson Street, Suite 701
Seattle, WA 98104-3855
206-296-6542 Fax 206-296-0197
TTY Relay: 711

November 01, 2012

Kyle Dorsey
Waste 2 Resources Program
Washington State Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Re: Proposed Amendments to Chapter 173-350 WAC, *Solid Waste Handling Standards*

Dear Mr. Dorsey:

On behalf of the King County Solid Waste Division, I would like to submit these comments for consideration as the Department of Ecology (Ecology) proceeds with Rule Making for WAC 173-350. King County strongly supports sustainable organics management efforts that protect public health, safety and natural resources. Sustainable organics management such as composting and anaerobic digestion helps keep organics out of the landfill and turn a waste into a valuable resource that is beneficial to our rate payers, cities, private partners, and our soil, air, water and climate.

At the same time, organics management must be carried out in a manner that minimizes impacts on neighboring communities. King County Solid Waste takes great pride in the award winning management of the Cedar Hills Landfill and state-of-the art privately run landfill-gas-to energy facility. We expect other public and private managers of solid waste in the state to achieve equally high levels of success in their management.

King County concurs with Ecology on the notable goals to ensure that organics management improves in the state. We support the goal of the proposed rule revisions to ensure that rules for composting, digestion and other methods of converting organics help facilities process materials and produce a product that protects human health and the environment. We are particularly supportive of the intent to improve the environmental performance of large scale composters and at the same time to help protect long term markets for compost products by improving compost quality.

King County Comments and Questions

173-350-100 Definitions

- **Garbage**

We suggest adding the following to the definition of Garbage (this is the definition in King County Code Title 10 Solid Waste (10.14.020 NN)):
"Garbage" means ((~~animal and vegetable waste resulting from the handling, storage, sale, preparation, cooking, and serving of foods~~)) all putrescible waste, except the following:

1. Organics that have been source separated for the purpose of recycling,
2. Sewage; and
3. Sewage sludge.

To the general public, and even to most solid waste professionals, the term "garbage" is used to refer to material that has not been segregated for recycling or composting. There is no reason for WAC 173-350 to contain a definition of garbage that is inconsistent with the generally accepted usage of the term and that is duplicative of the "putrescible waste" definition already included in WAC 173-350. The proposed revision by Ecology also would result in sewage and sewage sludge being considered to be garbage.

In our review of all references to "garbage" in 70.95 RCW and 81.77 RCW, we could not find any case where the intent of the regulations or statutes would be affected by limiting the definition of garbage to non-segregated putrescible solid waste.

- **Capacity**

We support the intent of this definition and the inclusion of all material, including finished composted material in the definition of "capacity" with a hopeful outcome being to move materials off-site faster. It is not clear if the new definition includes wood waste on-site that will be used as a bulking agent. If it does, we can't see a benefit to this inclusion and suggest an amendment such as "clean wood waste to be used as a feedstock is not included in the definition of capacity."

- **Physical Contaminants**

The new definition includes rocks as a contaminant. We are unaware of any human or environmental health issues that could be attributed to rock in compost. This natural inert, while not necessarily beneficial to a finished compost product, could lead to a failed contamination test, thus requiring disposal. It is not clear how this policy is beneficial to the intent of the WAC revisions. We suggest an amendment to delete "rocks" from the definition of "Physical Contaminants."

- **Plan of Operations**

We believe requiring a detailed plan of operations as part of the permitting process will help improve environmental performance of large scale composters. An increase in loads rejected with greater than five percent physical contamination will quickly provide a strong incentive for organics collectors to improve their education and enforcement to ensure cleaner loads.

The question remains, however, which regulatory agencies will review and approve the "progressive odor management plan" proposed to be required in the facility Operations Plans – only the jurisdictional Health Departments or both the Health Departments and regional air authorities?

- **Physical Contaminants**

We have some concerns with the addition of "physical contaminant" as a testing parameter. The other testing parameters such as metals, nitrogen, fecal coliform, salmonella and sharps all have clear potential harmful impacts to humans and the environment. Less clear is the negative impact from a physical contaminant such as plastics, glass, textiles, rubber, leather or metal in finished compost. While these materials are undesirable in compost and subsequently on our landscapes, it seems the market can serve as arbiter. Users and purchasers have the ability to reject compost that does not satisfy quality they are after. Physical contaminants as defined in 173-350-100 are very visible to the user, and processors will create a product they can sell; thus, a strong incentive is already built into the process. Regulating this parameter seems unnecessary and problematic. The proposed language does not make clear what methodology for measuring physical contamination will be used. What basis was used to determine the threshold set for 0.1% of film plastic? As was indicate in an earlier comment, why is rock included as a contaminant?

Additionally we are concerned that if a finished product fails a contamination test and must be landfilled, how will these materials be reconciled in a jurisdictions recycling rate? Will Ecology have a mechanism to track and sync with other reported data and will these then be deducted from county recycling rate calculations?

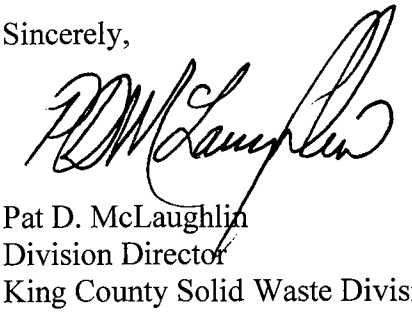
It seems there are some acceptable uses of compost with a small amount of contaminant such as glass, plastic, textiles or rock that is preferable to landfilling. As drafted, there appears to be no middle ground for compost that fails the physical contamination test (but passes all of the human health testing parameters) – it either must pass all or be landfilled. This is counter-productive to the stated goals to increase sustainable organics management efforts and both improve environmental performance and at the same time help protect long term markets for compost. The physical characteristics of compost as defined in the physical contaminants definition would be better suited by market drivers and not human health drivers whose measurement methodology is not clearly defined.

- **Biosolids – conflicting dual regulations**

In consultation with the King County Wastewater Treatment Division, we understand that composting facilities that process biosolids could potentially be subject to conflicting regulations under both WAC 173-350 and WAC 173-308. WAC 173-308-060 (2) states "Biosolids are not a solid waste and are not subject to regulation under solid waste laws." Biosolids are not typically regulated by local Health jurisdictions. There are differences in the testing parameters and testing standards for a biosolids based compost versus one produced from only yard debris and food scraps. The biosolids quality standards in WAC-173-30 are based on extensive scientific risk assessment that protects public health and the environment. Operating standards could be incorporated into the biosolids rule rather than creating a conflicting and duplicative state regulatory structure for biosolids. We encourage Ecology to clarify in the revised rule that biosolids are not regulated as solid waste under WAC 173-350 since they are covered under WAC 173-308.

Thank you again for your consideration of our comments and for your efforts to improve organics management in the State of Washington. Please contact Josh Marx, at 206-296-4429 or Josh.Marx@kingcounty.gov if you have any questions about these comments.

Sincerely,



Pat D. McLaughlin
Division Director
King County Solid Waste Division

Marx, Josh

From: Dorsey, Kyle (ECY) <kdor461@ECY.WA.GOV>
Sent: Tuesday, September 25, 2012 1:38 PM
To: ALY.DYSON@ORCAA.ORG; DEANBF@CO.THURSTON.WA.US; BLAMPHERE@BLUEIT.COM; WSMITH2@CI.TACOMA.WA.US; BOBE@SUNSHINEDISPOSAL.COM; CLAUDEW@PSCLEANAIR.ORG; CDANNETTELL@HARVESTPOWER.COM; CLINT@SWCLEANAIR.ORG; DAN@COMPOSTWASHINGTON.ORG; DPETERS@CO.KITSAP.WA.US; DBOSCH@TPCHD.ORG; rpri@bcaa.net; SJODINGD@ENERGY.WSU.EDU; Davis, Ed; EFRAIN.REYES@STEMILT.COM; ELIZABETH.LOWELL@GMAIL.COM; GABRIELLA.UHLAR-HEFFNER@SEATTLE.GOV; GORDON.LANCE@ORCAA.ORG; JANALLEN1@AOL.COM; JEFF.BORGIDA@AWIN.COM; JANTONAKOS@CI.TACOMA.WA.US; JAMESC@BFHD.WA.GOV; JIMN@PSCLEANAIR.ORG; JSOUTHWELL@SPOKANECLEANAIR.ORG; Marx, Josh; JULIE@NWCLEANAIR.ORG; May, Karen; KYLE.MATHISON@STEMILT.COM; LEONARD.DITORO@KINGCONTY.GOV; Haller, Lynnette A. (ECY); MARK.GOODIN@ORCAA.ORG; WA.GOV; pcsolidwaste@co.pierce.wa.us; STEVE@COMPOSTSYSTEMS.COM; Consumer.Inquiries@stemilt.com; SWAMBAC@CO.PIERCE.WA.US; Billings, Susan M. (ECY); HASAN@YRCAA.ORG; TSCHUTT@AMTODD.COM; TIMOTHY.CROLL@SEATTLE.GOV; TRACY@CI.SHELTON.WA.US
Subject: Proposed Rule for WAC 173-350 WAC Solid Waste Handling Standards
Attachments: Chapter 173-350 WAC Rule Proposal Notice Final.pdf

Hello, Ecology has published proposed amendments to Chapter 173-350 WAC - *Solid Waste Handling Standards*. The focus of the amendments is around composting, anaerobic digestion, and other methods of converting organic waste to products. The proposed amendments, related documents, and information on public hearings and opportunity for comment can be found on our web pages at http://www.ecy.wa.gov/programs/swfa/rules/rule350.html.

The Rule Proposal Notice is attached and provides a summary along with information on hearings and comment opportunities.

If you represent an organization or publication, please consider sharing this message and information with your constituents or subscribers.

Ecology maintains a ListServ where you can subscribe to receive updates on rule development. The ListServ disseminates information one way. It does not allow subscribers to post, so there are not a lot of messages to screen. Remove your name from the LISTSERV, join the LISTSERV, or change your password.

Hello everyone. The notice above went out to stakeholders on our ListServ this AM. I think some of you are aware that Chery Sullivan, our longtime Compost Specialist has moved on to the Department of Agriculture. I am working to notify all stakeholders regarding rule developments, and your names were on a list which Chery maintained. Some of you may also be members of the ListServ and will have received this message twice (maybe more times). I do encourage you to join the ListServ. Subscribers can't post, so there is not a lot of traffic, and it is the best way to stay informed. It's very easy from the link above.

Kyle Dorsey
Rules and Policy Specialist
Washington State Department of Ecology
Waste 2 Resources Program
360-407-6559
kyle.dorsey@ecy.wa.gov

PUBLIC WORKS
Kevin M. Nielsen, *Director*

80 Columbia Avenue
Marysville, Washington 98270
Phone (360) 363-8100
Fax (360) 363-8284
www.marysvillewa.gov

November 1st, 2012

Kyle Dorsey
Washington Dept. of Ecology
Waste 2 Resources Program
P.O. Box 47600
Olympia, WA 98504-7600

RE: Proposed Rule Amendments, Solid Waste Handling Standards

Dear Mr. Dorsey:

Please accept this letter from the City of Marysville (City) commenting on the proposed Rule Amendments to the Solid Waste Handling Standards. The City recognizes the value of composting and fully supports the intent to encourage small composting facilities. The City also supports the proposed goal of improving the environmental performance of large scale composters. The City has a vested interest in defining regulations for composing facility processes as our citizens are routinely expressing significant impacts to their quality of life regarding nuisance odors – particularly those from large scale operators.

Due to the significant and unreasonable odor impacts to citizens of Marysville and surrounding areas, particularly since about 2005 – 2006 when food waste was allowed to be introduced into the composting waste stream, the City also urges more detailed and vigorous rules for the siting and permitting of new composting facilities and the permit renewal of existing facilities.

As presently drafted, it appears that the "Progressive Odor Management Plan" will be the vehicle by which odor issues would be addressed. The City is concerned that the proposed Management Plan language is not stringent enough in defining thresholds for controlling odor, nor does the language define what specific violations will trigger enforcement actions by the local health district. The City strongly urges that specific, measurable and mandatory enforcement thresholds be provided for the local heath

districts and clear, specific details of how enforcement actions will escalate if nuisance odors persist. Without such specific standards the City submits that any rules or standards will be ineffective to address the nuisance odor issues frequently caused by composting operators.

We submit that there should be more specific provisions for enforcement around the new operating standard requiring that odor be minimized by maintaining porosity and keeping moisture content below 60%. Additionally, we would hope that the "template" form for a "progressive odor management plan" that DOE plans to provide is substantive, clear and thorough.

Under the Clean Water Act the discharge of wastewater into the waters of the State have specific, measurable effluent parameters set forth in an operator's NPDES Permit. The City urges that any standards for emission of air pollutants by solid waste and compost handlers should be managed similarly and regulated by the Department of Ecology under State law and the Clean Air Act. As such, any permit issued to operate such facilities needs to be subject to clear, measurable and enforceable odor standards. Such a program under the Clean Water Act as administered by Ecology has proven to be very effective and there is every reason to believe that a similar program as it relates to the emission of odors into the air would also be effective in holding operators and permittees accountable for their adverse impacts to the air we breathe.

The City also notes that the proposed Standards do not define an upper limit to the amount of compost which can be stored at a facility at any given time. The City strongly urges that an upper limit measurable in cubic yards or tons be included in the standards. Such a limit will reduce the likelihood of odors leaving the property and adversely impacting the surrounding communities.

Although the proposed regulatory language also now specifies that finished compost cannot be stockpiled on site for more than three years, we view three years as an overly long period for such on-site storage and would advocate for reducing that maximum length. We agree that finished compost stored on site, including bagged material, must be managed for dust and nuisance odors. In this regard, the City supports the inclusion of finished compost as regulated solid waste and we assert that rules which allow enforcement of volume, nuisance odors and stormwater requirements are appropriate and reasonable, especially where finished compost is directly associated with and in close proximity to the manufacturing operation. As such, the rules should address distance and proximity of the finished product to the manufacturing process and in such cases where they are within a certain distance of one another the total volume of materials allowed on site should include the raw materials, all material at various stages of processing and finished product.

It is the City's sincere hope that the changes proposed in the rule amendments will provide the local health districts and Department of Ecology with an improved ability to

regulate composting facilities in order to ensure that nuisance odor problems are eliminated.

We welcome any questions or clarifications you might have and we request notice of any future public hearings or further opportunities to comment on the proposed Rule Amendments.

Sincerely,

Kevin Nielsen, P.E.
Public Works Director

Gold Members

Republic Services

King County Solid Waste Division

Waste Connections, Inc

Waste Management Pacific NW

Silver Members

Cedar Grove Composting, Inc.

City of Bellevue Resource Conservation Program

CleanScapes

International Paper Recycling

Kitsap County Public Works

LeMay Family of Companies

Nucor Steel Seattle, Inc.

Pierce County Public Works

Seattle Public Utilities

Sunshine Disposal and Recycling

Total Reclaim/EcoLights Washington

State Dept. of Ecology

Bronze Members

America Chung Nam, Inc.

Calbag Metals, Co.

Cascadia Consulting Group

City of Tacoma Solid Waste

Fibres International

GK/Industrial Refuse Systems

North Mason Fiber Inc.

Olympic Environmental Resources

Pepsi Cola Bottling of Yakima

Rehrig Pacific Company

Seadrunar Recycling

SeaTac Steel Mill and Recycling Services

Snohomish County Solid Waste

SP Recycling Corporation

Starbucks Coffee Company

Thurston County Public Works

nily Phillips [emily@wsra.net]
ednesday, October 31, 2012 12:31 PM
orsey, Kyle (ECY)
omments regarding the proposed revisions to 173-350 WAC
age006.emz; WSRA 173-350 letter.pdf

October 29, 2012

Washington State Department of Ecology
Kyle Dorsey
Waste 2 Resources Program
PO Box 47600
Olympia, WA 98504-7600

Dear Kyle,

In keeping with the Washington State Recycling Association's mission to provide leadership and education that fosters the expansion, diversity and economic vitality of recycling as part of sustainable resource management, I respectfully submit to you the Association's comments on the proposed revisions to 173-350 WAC:

Issues of Concern:

- **The proposed rule change significantly changes the definition of what are considered "contaminants" in finished compost**, but leaves the upper limit at 1% by weight. The primary concern of the WSRA is that this definition has been modified to include rocks. The WSRA believes that this is an extensive requirement that seems unreasonable. Furthermore, there is no evidence to support that the presence of rocks in finished compost poses a risk to human health and the environment.
    - **Proposed revision:** Remove rocks from the definition of physical contaminants.

- **The proposed rule adds a requirement that film plastic make up no more than 0.1% of finished compost, by weight**. The WSRA does support the reduction of contamination in finished compost to the greatest extent possible, and we find it to be essential to effectively market compost. The concern is that this puts an extra financial burden on our member composters that is unreasonable. Additional laboratory testing costs and processing costs could significantly reduce the

competitive marketing of compost and drive down the demand for the more expensive product.

- **Proposed Revision**: Eliminate the 0.1% film plastic requirement. It is already included in the 1% total physical contamination threshold.

Our member companies are working tirelessly throughout the State to reduce incoming contaminants and residual contaminants in finished compost in order to effectively market their products and divert more and more waste from landfill disposal. We strongly encourage the Department to reconsider these proposed provisions in the rule, and reach a compromise that retains the integrity of the industry, but does not place an economic burden on processors.

Thank you for the opportunity to comment, and we look forward to working toward a rule that will support the State's waste diversion goals and support healthy and effective recycling infrastructure.

Sincerely,

Emily Phillips
Executive Director

Gold Members

Republic Services

King County Solid Waste Division

Waste Connections, Inc

Waste Management Pacific NW

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wsra Washington State Recycling Association

October 29, 2012

Washington State Department of Ecology
Kyle Dorsey
Waste 2 Resources Program
PO Box 47600
Olympia, WA 98504-7600

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Our member companies are working tirelessly throughout the State to reduce incoming contaminants and residual contaminants in finished compost in order to effectively market their products and divert more and more waste from landfill disposal. We strongly encourage the Department to reconsider these proposed

130 Andover Park East, Suite 303 ● Tukwila, WA 98188-2909
Tel 206-244-0311● Fax (206) 244-4413 ● recycle@wsra.net ● www.wsra.net

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Sincerely,

Emily Phillips
Executive Director

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Dorsey, Kyle (ECY)

From: Pon, Yolanda [Yolanda.Pon@kingcounty.gov]
Sent: Friday, November 02, 2012 4:43 PM
To: Dorsey, Kyle (ECY)
Cc: Lasby, Bill; Di Toro, Leonard
Subject: WAC 173-350 Compost Revisions doc
Attachments: WAC 173-350 Compost Revisions doc (4).doc

Follow Up Flag: Review
Flag Status: Flagged

Kyle,

You have your work cut out for you! Good luck! Please review the following comments that are also marked in the attached document from Public Health - Seattle & King County. Thank you for your consideration.

- Page 6, "Controlled conditions" additional text suggestion
- Page 11, “Organic materials” comment
- Page 19, comment on 3rd column under (b) and (c)(i)
- Page 21, WAC 173-350-220(1)(c)(v) additional text suggestion
- Page 29, WAC 173-350-220(4)(a)(vi)(A) proper capitalization
- Page 31, insert period in 2nd line at top of page
- Page 33, comment on WAC 173-350-220(4)(f)(ii)(B)
- Page 40, comment in Table 250-A in 3rd column under (e)
- Page 43, comment in Table 250-A in 3rd column under (c)(ii)

Yolanda
206-263-8459

AMENDATORY SECTION (Amending Order 99-24, filed 1/10/03, effective 2/10/03)

WAC 173-350-020 Applicability. This chapter applies to facilities and activities that manage solid wastes as that term is defined in WAC 173-350-100. This chapter does not apply to the following:

(1) Overburden from mining operations intended for return to the mine;

(2) Wood waste used for ornamental, animal bedding, mulch and plant bedding, or road building purposes;

(3) Wood waste directly resulting from the harvesting of timber left at the point of generation and subject to chapter 76.09 RCW, Forest practices;

(4) Land application of manures and crop residues at agronomic rates;

(5) Agricultural composting when all agricultural wastes are generated, processed, and applied on-farm at agronomic rates in accordance with accepted agricultural practices. This categorical exemption does not apply to producers subject to RCW 70.95.306, composting of bovine and equine carcasses;

(6) Mushroom substrate production when materials that are not solid waste (such as processed chicken manure) are used in the production;

(7) Home composting as defined in WAC 173-350-100;

((~~(6)~~)) (8) Single-family residences and single-family farms whose year round occupants engage in solid waste disposal regulated under WAC 173-351-700(4);

((~~(7)~~)) (9) Clean soils and clean dredged material as defined in WAC 173-350-100;

((~~(8)~~)) (10) Dredged material as defined in 40 C.F.R. 232.2 that is subject to:

(a) The requirements of a permit issued by the U.S. Army Corps of Engineers or an approved state under section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1344);

(b) The requirements of a permit issued by the U.S. Army Corps of Engineers under section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413); or

(c) In the case of U.S. Army Corps of Engineers civil works projects, the administrative equivalent of the permits referred to in (a) and (b) of this subsection, as provided for in U.S. Army Corps of Engineers regulations, including, for example, 33 C.F.R. 336.1, 336.2, and 337.6;

((~~(9)~~)) (11) Biosolids that are managed under chapter 173-308 WAC, Biosolids management;

((~~(10)~~)) (12) Domestic septage taken to a sewage treatment plant permitted under chapter 90.48 RCW, Water pollution control;

((~~(11)~~)) (13) Liquid wastes, the discharge or potential

discharge of which, is regulated under federal, state or local water pollution permits;

((~~(12)~~)) (14) Domestic wastewater facilities and industrial wastewater facilities otherwise regulated by federal, state, or local water pollution permits;

((~~(13)~~)) (15) Dangerous wastes fully regulated under chapter 70.105 RCW, Hazardous waste management, and chapter 173-303 WAC, Dangerous waste regulations;

((~~(14)~~)) (16) Special incinerator ash regulated under chapter 173-306 WAC, Special incinerator ash management standards;

((~~(15)~~)) (17) PCB wastes regulated under 40 C.F.R. Part 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions, except for:

(a) PCB household waste; and

(b) PCB bulk product wastes identified in 40 C.F.R. Part 761.62 (b)(1) that are disposed of in limited purpose landfills;

((~~(16)~~)) (18) Radioactive wastes, defined by chapter 246-220 WAC, Radiation protection--General provisions, and chapter 246-232 WAC, Radioactive protection--Licensing applicability;

((~~(17)~~)) (19) Landfilling of municipal solid waste regulated under chapter 173-351 WAC, Criteria for municipal solid waste landfills;

((~~(18)~~)) (20) Drop boxes used solely for collecting recyclable materials;

((~~(19)~~)) (21) Intermodal facilities as defined in WAC 173-350-100; and

((~~(20)~~)) (22) Solid waste handling facilities that have engaged in closure and closed before the effective date of this chapter.

AMENDATORY SECTION (Amending Order 99-24, filed 1/10/03, effective 2/10/03)

WAC 173-350-030 Effective dates. (1) Effective dates. These standards apply to all facilities, except existing facilities, ((~~upon the effective date of this chapter~~)) when updated or new sections in this chapter become effective.

(2) Effective dates - Existing facilities.

(a) The owner or operator of existing facilities ((~~shall~~)) must:

(i) Meet all applicable operating, environmental monitoring, closure and post-closure planning, and financial assurance requirements of this chapter within ((~~twenty-four~~)) twelve months of the effective date of updated or new sections in this chapter; and

(ii) Meet all applicable performance and design requirements, other than location or setback requirements, within ((~~thirty-six~~)) eighteen months of the effective date of updated or new sections in

this chapter.

(b) These standards apply to all new solid waste handling units at existing facilities upon the effective date of this chapter.

(c) The owner or operator of existing facilities ((~~shall~~)) must initiate the permit modification process outlined in WAC 173-350-710(4) within ((~~eighteen~~)) twelve months after the effective date of updated or new sections in this chapter. If a permit modification is necessary, every application for a permit modification ((~~shall~~)) must describe the date and methods for altering an existing facility to meet (a)(i) ((~~through (iii)~~)) and (ii) of this subsection.

(d) The jurisdictional health department ((~~shall~~)) must determine if a new permit application is required based on the extent of the changes needed to bring the facility into compliance.

(e) ((~~An existing facility completing closure within twelve months of the effective date of this chapter may close in compliance with the requirements of chapter 173-304 WAC, Minimum functional standards for solid waste handling. Any facility that does not complete closure within twelve months of the effective date of this chapter shall~~)) All facilities must close in compliance with applicable requirements of this chapter.

AMENDATORY SECTION (Amending Order 04-12, filed 5/10/05, effective 6/10/05)

WAC 173-350-100 Definitions. When used in this chapter, the following terms have the meanings given below.

"Active area" means that portion of a facility where solid waste recycling, reuse, treatment, storage, or disposal operations are being, are proposed to be, or have been conducted. Setbacks ((~~shall~~)) must not be considered part of the active area of a facility.

"Aerobic decomposition" means decomposition of organic materials primarily by aerobic microbes under controlled conditions.

"Agricultural composting" means composting of agricultural waste as an integral component of a system designed to improve soil health and recycle agricultural wastes. Agricultural composting is conducted on lands used for farming.

"Agricultural wastes" means wastes on farms resulting from the raising or growing of plants and animals including, but not limited to, crop residue, manure ((~~and~~)) from herbivores and nonherbivores, animal bedding, and carcasses of dead animals ((~~weighing each or collectively in excess of fifteen pounds~~)).

"Agronomic rates" means the application rate (dry weight basis) that will provide the amount of nitrogen or other critical nutrient required for optimum growth of vegetation, and that will

not result in the violation of applicable standards or requirements for the protection of ground or surface water as established under chapter 90.48 RCW, Water pollution control and related rules including chapter 173-200 WAC, Water quality standards for groundwaters of the state of Washington, and chapter 173-201A WAC, Water quality standards for surface waters of the state of Washington.

"Air quality standard" means a standard set for maximum allowable contamination in ambient air as set forth in chapter 173-400 WAC, General regulations for air pollution sources.

"Anaerobic digester" means an enclosed vessel or container that processes organic material into biogas and digestate through microbial decomposition under anaerobic (low oxygen) conditions.

"Below ground tank" means a device meeting the definition of "tank" in this chapter where a portion of the tank wall is situated to any degree within the ground, thereby preventing visual inspection of that external surface of the tank that is in the ground.

"Beneficial use" means the use of solid waste as an ingredient in a manufacturing process, or as an effective substitute for natural or commercial products, in a manner that does not pose a threat to human health or the environment. Avoidance of processing or disposal cost alone does not constitute beneficial use.

"Biofilter" means a bed or layer of material that supports beneficial microorganisms, typically a mixture of compost and wood chips, designed to filter and treat air emissions. A biofilter adsorbs and then biologically degrades odorous compounds.

"Biosolids" means municipal sewage sludge that is a primarily organic, semisolid product resulting from the wastewater treatment process, that can be beneficially recycled and meets all applicable requirements under chapter 173-308 WAC, Biosolids management. Biosolids includes a material derived from biosolids and septic tank sludge, also known as septage, that can be beneficially recycled and meets all applicable requirements under chapter 173-308 WAC, Biosolids management.

"Buffer" means a permanently vegetated strip adjacent to an application area, the purpose of which is to filter runoff or overspray from the application area and protect an adjacent area.

"Bulking agent" means an ingredient used to improve structure and porosity, or to lower moisture content, primarily in composting. Bulking agents improve convective air flow and reduce settling and compaction. Bulking agents may include, but are not limited to, clean wood waste, straw, and other high-carbon materials.

"Cab cards" means a license carried in a vehicle that authorizes that vehicle to legally pick up waste tires and haul to a permitted, licensed facility or an exempt facility for deposit.

"Capacity" means the maximum amount of material that can be contained. Capacity is identified by the conditions of exemption, the permit, or the plan of operations as approved by the jurisdictional health department or the department. All material includes, but is not limited to, incoming waste, feedstocks,

stockpiled wastes, active composting, curing piles, composted materials, and sorted recyclable materials on-site.

"Captive insurance companies" means companies that are wholly owned subsidiaries controlled by the parent company and established to insure the parent company or its other subsidiaries.

"Channel migration zone" means the lateral extent of likely movement of a stream or river channel along a stream reach.

"Clean soils and clean dredged material" means soils and dredged material which are not dangerous wastes, contaminated soils, or contaminated dredged material as defined in this section.

"Closure" means those actions taken by the owner or operator of a solid waste handling facility to cease disposal operations or other solid waste handling activities, to ensure that all such facilities are closed in conformance with applicable regulations at the time of such closures and to prepare the site for the post-closure period.

"Closure plan" means a written plan developed by an owner or operator of a facility detailing how a facility is to close at the end of its active life.

"Composted material" means organic solid waste that has undergone biological degradation and transformation under controlled conditions designed to promote aerobic decomposition at a solid waste facility in compliance with the requirements of this chapter. Composting is a form of organic material recycling. Natural decay of organic solid waste under uncontrolled conditions does not result in composted material.

"Composting" means the biological degradation and transformation of organic solid waste under controlled conditions designed to promote aerobic decomposition. Natural decay of organic solid waste under uncontrolled conditions is not composting.

"Conditionally exempt small quantity generator (CESQG)" means a dangerous waste generator whose dangerous wastes are not subject to regulation under chapter 70.105 RCW, Hazardous waste management, solely because the waste is generated or accumulated in quantities below the threshold for regulation and meets the conditions prescribed in WAC 173-303-070 (8)(b).

"Conditionally exempt small quantity generator (CESQG) waste" means dangerous waste generated by a conditionally exempt small quantity generator.

"Container" means a portable device used for the collection, storage, and/or transportation of solid waste including, but not limited to, reusable containers, disposable containers, and detachable containers.

"Contaminant" means any chemical, physical, biological, or radiological substance that does not occur naturally in the environment or that occurs at concentrations greater than natural background levels.

"Contaminate" means the release of solid waste, leachate, or gases emitted by solid waste, such that contaminants enter the environment at concentrations that pose a threat to human health or the environment, or cause a violation of any applicable

environmental regulation.

"Contaminated dredged material" means dredged material resulting from the dredging of surface waters of the state where contaminants are present in the dredged material at concentrations not suitable for open water disposal and the dredged material is not dangerous waste and is not regulated by section 404 of the Federal Clean Water Act (P.L. 95-217).

"Contaminated soils" means soils removed during the cleanup of a hazardous waste site, or a dangerous waste facility closure, corrective actions or other clean-up activities and which contain harmful substances but are not designated dangerous wastes.

"Controlled conditions" means the conditions in which facilities must be operated to meet the performance standards of WAC 173-350-040 and the applicable handling standards of this chapter. Controlled conditions at compost facilities may include, but are not limited to, controlling odors, run-on and runoff control, moisture levels, pH levels, carbon to nitrogen ratios, temperatures, oxygen levels, particle sizes, and free air space.

"Corrosion expert" means a person certified by the National Association of Corrosion Engineers (NACE) or a registered professional engineer who has certification or licensing that includes education and experience in corrosion control.

"Crop residues" means vegetative material leftover from the harvesting of crops, including leftover pieces or whole fruits or vegetables, crop leaves and stems. Crop residue does not include food processing waste.

"Dangerous wastes" means any solid waste designated as dangerous waste by the department under chapter 173-303 WAC, Dangerous waste regulations.

"Department" means the Washington state department of ecology.

"Detachable containers" means reusable containers that are mechanically loaded or handled, such as a dumpster or drop box.

"Digestate" means both solid and liquid substances that remain following anaerobic digestion of organic material in an anaerobic digester.

"Disposable containers" means containers that are used once to handle solid waste, such as plastic bags, cardboard boxes and paper bags.

"Disposal" or **"deposition"** means the discharge, deposit, injection, dumping, leaking, or placing of any solid waste into or on any land or water.

"Domestic septage" means Class I, II or III domestic septage as defined in chapter 173-308 WAC, Biosolids management.

"Domestic wastewater facility" means all structures, equipment, or processes required to collect, carry away, treat, reclaim, or dispose of domestic wastewater together with such industrial waste as may be present.

"Drop box facility" means a facility used for the placement of a detachable container including the area adjacent for necessary entrance and exit roads, unloading and turn-around areas. Drop box facilities normally serve the general public with loose loads and receive waste from ((~~offsite~~)) off-site.

"Energy recovery" means the recovery of energy in a useable form from mass burning or refuse-derived fuel incineration, pyrolysis or any other means of using the heat of combustion of solid waste that involves high temperature (above twelve hundred degrees Fahrenheit) processing.

"Existing facility" means a facility which is owned or leased, and in operation, or for which facility construction has begun, on or before the effective date of this chapter and the owner or operator has obtained permits or approvals necessary under federal, state and local statutes, regulations and ordinances.

"Facility" means all contiguous land (including buffers and setbacks) and structures, other appurtenances, and improvements on the land used for solid waste handling.

"Facility construction" means the continuous on-site physical act of constructing solid waste handling unit(s) or when the owner or operator of a facility has entered into contractual obligations for physical construction of the facility that cannot be canceled or modified without substantial financial loss.

"Facility structures" means constructed infrastructure such as buildings, sheds, utility lines, and piping on the facility.

"Feedstock" means a source separated waste material used as a component of composting, manufacturing, or as part of an industrial process.

"Food processing waste" means a source-separated organic material that is generated by a food processing facility licensed to process food by the United States Department of Agriculture, the United States Food and Drug Administration, the Washington state department of agriculture, or other applicable regulatory agency. Food processing wastes may include, but are not limited to, sludge from food processing water treatment plants, culls, DAF (dissolved air flotation from a food processing facility), pomace, and paunch manure, not intended for animal or human consumption.

"Garbage" means ((~~animal and vegetable waste resulting from the handling, storage, sale, preparation, cooking, and serving of foods~~)) putrescible solid wastes.

"Groundwater" means that part of the subsurface water that is in the zone of saturation.

"Holocene fault" means a plane along which earthen material on one side has been displaced with respect to that on the other side and has occurred in the most recent epoch of the Quaternary period extending from the end of the Pleistocene to the present.

"Home composting" means composting of on-site generated wastes, and incidental materials beneficial to the composting process, by the owner or person in control of a single-family residence, or for a dwelling that houses two to five families, such as a duplex or clustered dwellings.

"Household hazardous wastes" means any waste which exhibits any of the properties of dangerous wastes that is exempt from regulation under chapter 70.105 RCW, Hazardous waste management, solely because the waste is generated by households. Household hazardous waste can also include other solid waste identified in the local hazardous waste management plan prepared pursuant to

chapter 70.105 RCW, Hazardous waste management.

"Hydrostratigraphic unit" means any water-bearing geologic unit or units hydraulically connected or grouped together on the basis of similar hydraulic conductivity which can be reasonably monitored; several geologic formations or part of a geologic formation may be grouped into a single hydrostratigraphic unit; perched sand lenses may be considered a hydrostratigraphic unit or part of a hydrostratigraphic unit, for example.

"Incineration" means reducing the volume of solid wastes by use of an enclosed device using controlled flame combustion.

"Incompatible waste" means a waste that is unsuitable for mixing with another waste or material because the mixture might produce excessive heat or pressure, fire or explosion, violent reaction, toxic dust, fumes, mists, or gases, or flammable fumes or gases.

"Industrial solid wastes" means solid waste generated from manufacturing operations, food processing, or other industrial processes.

"Industrial wastewater facility" means all structures, equipment, or processes required to collect, carry away, treat, reclaim, or dispose of industrial wastewater.

"Inert waste" means solid wastes that meet the criteria for inert waste in WAC 173-350-990.

"Inert waste landfill" means a landfill that receives only inert wastes.

"Intermediate solid waste handling facility" means any intermediate use or processing site engaged in solid waste handling which is not the final site of disposal. This includes material recovery facilities, transfer stations, drop boxes, baling and compaction sites.

"Intermodal facility" means any facility operated for the purpose of transporting closed containers of waste and the containers are not opened for further treatment, processing or consolidation of the waste.

"Jurisdictional health department" means city, county, city-county or district public health department.

"Land application site" means a contiguous area of land under the same ownership or operational control on which solid wastes are beneficially utilized for their agronomic or soil-amending capability.

"Land reclamation" means using solid waste to restore drastically disturbed lands including, but not limited to, construction sites and surface mines. Using solid waste as a component of fill is not land reclamation.

"Landfill" means a disposal facility or part of a facility at which solid waste is permanently placed in or on land including facilities that use solid waste as a component of fill.

"Leachate" means water or other liquid within a solid waste handling unit that has been contaminated by dissolved or suspended materials due to contact with solid waste or gases.

"Limited moderate risk waste" means waste batteries, waste oil, and waste antifreeze generated from households.

"Limited moderate risk waste facility" means a facility that collects, stores, and consolidates only limited moderate risk waste.

"Limited purpose landfill" means a landfill which is not regulated or permitted by other state or federal environmental regulations that receives solid wastes limited by type or source. Limited purpose landfills include, but are not limited to, landfills that receive segregated industrial solid waste, construction, demolition and landclearing debris, wood waste, ash (other than special incinerator ash), and dredged material. Limited purpose landfills do not include inert waste landfills, municipal solid waste landfills regulated under chapter 173-351 WAC, Criteria for municipal solid waste landfills, landfills disposing of special incinerator ash regulated under chapter 173-306 WAC, Special incinerator ash management standards, landfills regulated under chapter 173-303 WAC, Dangerous waste regulations, or chemical waste landfills used for the disposal of polychlorinated biphenyls (PCBs) regulated under Title 40 C.F.R. Part 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.

"Liquid" means a substance that flows readily and assumes the form of its container but retains its independent volume.

"Liquid waste" means any solid waste which is deemed to contain free liquids as determined by the Paint Filter Liquids Test, Method 9095, in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846.

"Lithified earth material" means all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments. This term does not include man-made materials, such as fill, concrete or asphalt, or unconsolidated earth materials, soil or regolith lying at or near the earth's surface.

"Local fire control agency" means a public or private agency or corporation providing fire protection such as a local fire department, the department of natural resources or the United States Forest Service.

"Lower explosive limits" means the lowest percentage by volume of a mixture of explosive gases that will propagate a flame in air at twenty-five degrees centigrade and atmospheric pressure.

"Manufactured organics" means source separated solid wastes, such as nonplastic coated paper plates, cups, compostable bags, and other items designed to decompose through composting, anaerobic digestion, or through other organic materials recycling processes. Manufactured organics do not include physical contaminants such as plastics and coated paper products that will not readily decompose under typical composting conditions, or wood derived fuel or wood waste as defined in this section.

"Manure and bedding" means manure (feces) and bedding from herbivorous animals such as horses, cows, sheep, and goats.

"Material recovery facility" means any facility that collects, compacts, repackages, sorts, or processes for transport source

separated solid waste for the purpose of recycling.

"Mobile systems and collection events" means activities conducted at a temporary location to collect moderate risk waste.

"Moderate risk waste (MRW)" means solid waste that is limited to conditionally exempt small quantity generator (CESQG) waste and household hazardous waste (HHW) as defined in this chapter.

"MRW facility" means a solid waste handling unit that is used to collect, treat, recycle, exchange, store, consolidate, and/or transfer moderate risk waste. This does not include mobile systems and collection events or limited MRW facilities that meet the applicable terms and conditions of WAC 173-350-360 (2) or (3).

"Municipal solid waste (MSW)" means a subset of solid waste which includes unsegregated garbage, refuse and similar solid waste material discarded from residential, commercial, institutional and industrial sources and community activities, including residue after recyclables have been separated. Solid waste that has been segregated by source and characteristic may qualify for management as a non-MSW solid waste, at a facility designed and operated to address the waste's characteristics and potential environmental impacts. The term MSW does not include:

Dangerous wastes other than wastes excluded from the requirements of chapter 173-303 WAC, Dangerous waste regulations, in WAC 173-303-071 such as household hazardous wastes;

Any solid waste, including contaminated soil and debris, resulting from response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. 9601), chapter 70.105D RCW, Hazardous waste cleanup--Model Toxics Control Act, chapter 173-340 WAC, the Model Toxics Control Act cleanup regulation or a remedial action taken under those rules; nor

Mixed or segregated recyclable material that has been source-separated from garbage, refuse and similar solid waste. The residual from source separated recyclables is MSW.

"Natural background" means the concentration of chemical, physical, biological, or radiological substances consistently present in the environment that has not been influenced by regional or localized human activities. Metals at concentrations naturally occurring in bedrock, sediments and soils due solely to the geologic processes that formed the materials are natural background. In addition, low concentrations of other persistent substances due solely to the global use or formation of these substances are natural background.

"New solid waste handling unit" means a solid waste handling unit that begins operation or facility construction, and significant modifications to existing solid waste handling units, after the effective date of this chapter.

"Nuisance odor" means any odor which is found offensive or may unreasonably interfere with any person's health, comfort, or enjoyment beyond the property boundary of a facility.

"On-farm" means activities taking place on any agricultural land under the control of the same entity including parcels that are not geographically contiguous but managed by the same entity

for agricultural production.

"One hundred-year flood plain" means any land area that is subject to one percent or greater chance of flooding in any given year from any source.

"Open burning" means the burning of solid waste materials in an open fire or an outdoor container without providing for the control of combustion or the control of emissions from the combustion.

"Organic feedstocks" means source separated organic materials suitable for vermicomposting, composting, anaerobic digestion, and other processes that transform waste organic materials into usable or marketable materials.

"Organic materials" means any solid waste that is a biological substance of plant or animal origin capable of microbial degradation. Organic materials include, but are not limited to, manure, yard debris, food waste, food processing wastes, wood waste, animal manure, and garden wastes.

Comment [E1]: How does animal manure differ from manure? Manure is defined and includes the feces from herbivorous animals.

"Overburden" means the earth, rock, soil, and topsoil that lie above mineral deposits.

"Permeability" means the ease with which a porous material allows liquid or gaseous fluids to flow through it. For water, this is usually expressed in units of centimeters per second and termed hydraulic conductivity.

"Permit" means an authorization issued by the jurisdictional health department which allows a person to perform solid waste activities at a specific location and which includes specific conditions for such facility operations.

"Person" means an individual, firm, association, copartnership, political subdivision, government agency, municipality, industry, public or private corporation, or any other entity whatever.

"Physical contaminants" as they relate to incoming feedstocks and compost quality means inorganic and organic constituents that are not readily decomposed during the composting process including, but not limited to, plastics, glass, textiles, rubber, leather, metal, ceramics, rocks, polystyrene, and wood pieces containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate.

"Pile" means any noncontainerized accumulation of solid waste that is used for treatment or storage.

"Plan of operation" means the written plan developed by an owner or operator of a facility detailing how a facility is to be operated during its active life.

"Point of compliance" means a point established in the groundwater by the jurisdictional health department as near a possible source of release as technically, hydrogeologically and geographically feasible.

"Post-closure" means the requirements placed upon disposal facilities after closure to ensure their environmental safety for at least a twenty-year period or until the site becomes stabilized (i.e., little or no settlement, gas production, or leachate generation).

"Post-closure plan" means a written plan developed by an owner or operator of a facility detailing how a facility is to meet the post-closure requirements for the facility.

"Post-consumer food waste" means source separated organic materials originally intended for human consumption including, but not limited to, vegetables, fruits, grains, meats and dairy products resulting from serving food. Post-consumer food waste is typically collected from cafeterias, homes, and restaurants.

"Preconsumer animal-based wastes" means source separated organic materials from animals such as meat, fat, dairy, or eggs that are a result of food preparation for human consumption or are products that did not reach the intended consumer. Preconsumer animal-based wastes are typically collected from food processing facilities and grocery stores.

"Preconsumer vegetative waste" means source separated organic materials from vegetables, such as pits, peels, and pomace from human food preparation, or vegetable products that did not reach the consumer. Preconsumer vegetative wastes are typically collected from food processing facilities and grocery stores.

"Premises" means a tract or parcel of land with or without habitable buildings.

"Private facility" means a privately owned facility maintained on private property solely for the purpose of managing waste generated by the entity owning the site.

"Processing" means an operation to convert a material into a useful product or to prepare it for reuse, recycling, or disposal.

"Product take-back center" means a retail outlet or distributor that accepts household hazardous waste of comparable types as the products offered for sale or distributed at that outlet.

"Public facility" means a publicly or privately owned facility that accepts solid waste generated by other persons;

"Putrescible waste" means solid waste which contains material capable of being readily decomposed by microorganisms and which is likely to produce offensive odors.

"Pyrolysis" means the process in which solid wastes are heated in an enclosed device in the absence of oxygen to vaporization, producing a hydrocarbon-rich gas capable of being burned for recovery of energy.

"Recyclable materials" means those solid wastes that are separated for recycling or reuse, including, but not limited to, papers, metals, and glass, that are identified as recyclable material pursuant to a local comprehensive solid waste plan.

"Recycling" means transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration. Recycling does not include collection, compacting, repackaging, and sorting for the purpose of transport.

"Representative sample" means a sample that can be expected to exhibit the average properties of the sample source.

"Reserved" means a section having no requirements and which is set aside for future possible rule making as a note to the

regulated community.

"Reusable containers" means containers that are used more than once to handle solid waste, such as garbage cans.

"Runoff" means any rainwater, leachate or other liquid that drains over land from any part of the facility.

"Run-on" means any rainwater or other liquid that drains over land onto any part of a facility.

"Scavenging" means the removal of materials at a disposal facility, or intermediate solid waste-handling facility, without the approval of the owner or operator and the jurisdictional health department.

"Seismic impact zone" means an area with a ten percent or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull, will exceed 0.10g in two hundred fifty years.

"Setback" means that part of a facility that lies between the active area and the property boundary.

"Sewage sludge" means solid, semisolid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated.

"Soil amendment" means any substance that is intended to improve the physical characteristics of soil, except composted material, commercial fertilizers, agricultural liming agents, unmanipulated animal manures, unmanipulated vegetable manures, food wastes, food processing wastes, and materials exempted by rule of the department, such as biosolids as defined in chapter 70.95J RCW, Municipal sewage sludge--Biosolids and wastewater, as regulated in chapter 90.48 RCW, Water pollution control.

"Solid waste" or **"wastes"** means all putrescible and nonputrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

"Solid waste handling" means the management, storage, collection, transportation, treatment, use, processing or final disposal of solid wastes, including the recovery and recycling of materials from solid wastes, the recovery of energy resources from such wastes or the conversion of the energy in such wastes to more useful forms or combinations thereof.

"Solid waste handling unit" means discrete areas of land, sealed surfaces, liner systems, excavations, facility structures, or other appurtenances within a facility used for solid waste handling.

"Source separation" means the separation of different kinds of solid waste at the place where the waste originates.

"Storage" means the holding of solid waste materials for a

temporary period.

"Surface impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), and which is designed to hold an accumulation of liquids or sludges. The term includes holding, storage, settling, and aeration pits, ponds, or lagoons, but does not include injection wells.

"Surface water" means all lakes, rivers, ponds, wetlands, streams, inland waters, salt waters and all other surface water and surface water courses within the jurisdiction of the state of Washington.

"Tank" means a stationary device designed to contain an accumulation of liquid or semisolid materials meeting the definition of solid waste or leachate, and which is constructed primarily of nonearthen materials to provide structural support.

"Throughput" means the amount of feedstocks in tons or cubic yards that a solid waste facility processes in a given amount of time, such as a calendar year. Throughput is identified by the conditions of exemption, the permit, or the plan of operations as approved by the jurisdictional health department or the department.

"Transfer station" means a permanent, fixed, supplemental collection and transportation facility, used by persons and route collection vehicles to deposit collected solid waste from ((~~offsite~~)) off-site into a larger transfer vehicle for transport to a solid waste handling facility.

"Treatment" means the physical, chemical, or biological processing of solid waste to make such solid wastes safer for storage or disposal, amenable for recycling or energy recovery, or reduced in volume.

"Twenty-five-year storm" means a storm of twenty-four hours duration and of such intensity that it has a four percent probability of being equaled or exceeded each year.

((~~**"Type 1 feedstocks"** means source-separated yard and garden wastes, wood wastes, agricultural crop residues, wax-coated cardboard, preconsumer vegetative food wastes, other similar source-separated materials that the jurisdictional health department determines to have a comparable low level of risk in hazardous substances, human pathogens, and physical contaminants.~~

~~**"Type 2 feedstocks"** means manure and bedding from herbivorous animals that the jurisdictional health department determines to have a comparable low level of risk in hazardous substances and physical contaminants when compared to a type 1 feedstock.~~

~~**"Type 3 feedstocks"** means meat and postconsumer source-separated food wastes or other similar source-separated materials that the jurisdictional health department determines to have a comparable low level of risk in hazardous substances and physical contaminants, but are likely to have high levels of human pathogens.~~

~~**"Type 4 feedstocks"** means mixed municipal solid wastes, postcollection separated or processed solid wastes, industrial solid wastes, industrial biological treatment sludges, or other~~

~~similar compostable materials that the jurisdictional health department determines to have a comparable high level of risk in hazardous substances, human pathogens and physical contaminants.~~))

"Universal wastes" means universal wastes as defined in chapter 173-303 WAC, Dangerous waste regulations. Universal wastes include, but may not be limited to, dangerous waste batteries, mercury-containing thermostats, and universal waste lamps generated by fully regulated dangerous waste generators or CESQGs.

"Unstable area" means a location that is susceptible to forces capable of impairing the integrity of the facility's liners, monitoring system or structural components. Unstable areas can include poor foundation conditions and areas susceptible to mass movements.

"Vadose zone" means that portion of a geologic formation in which soil pores contain some water, the pressure of that water is less than atmospheric pressure, and the formation occurs above the zone of saturation.

"Vector" means a living animal, including, but not limited to, insects, rodents, and birds, which is capable of transmitting an infectious disease from one organism to another.

"Vermicomposting" means the controlled and managed process by which live worms convert organic residues into dark, fertile, granular excrement.

"Waste tires" means any tires that are no longer suitable for their original intended purpose because of wear, damage or defect. Used tires, which were originally intended for use on public highways that are considered unsafe in accordance with RCW 46.37.425, are waste tires. Waste tires also include quantities of used tires that may be suitable for their original intended purpose when mixed with tires considered unsafe per RCW 46.37.425.

"Wetlands" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

"Wood derived fuel" means wood pieces or particles used as a fuel for energy recovery, which contain paint, bonding agents, or creosote. Wood derivedfuel does not include wood pieces or particles coated with paint that contains lead or mercury, or wood treated with other chemical preservatives such as pentachlorophenol, copper naphthanate, or copper-chrome-arsenate.

"Wood waste" means solid waste consisting of wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, construction, demolition, handling and storage of raw materials, trees and stumps. This includes, but is not limited to, sawdust, chips, shavings, bark, pulp, hogged fuel, and log sort yard waste, but does not include wood pieces or particles containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate.

"Yard debris" means plant material commonly created in the

course of maintaining yards and gardens and through horticulture, gardening, landscaping or similar activities. Yard debris includes, but is not limited to, grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit, and vegetable garden debris. Yard debris does not include sod (a combination of grass, roots, soil, and rocks) or soil.

"Zone of saturation" means that part of a geologic formation in which soil pores are filled with water and the pressure of that water is equal to or greater than atmospheric pressure.

AMENDATORY SECTION (Amending Order 99-24, filed 1/10/03, effective 2/10/03)

WAC 173-350-220 Composting facilities. (1) Composting facilities - Applicability.

(a) This section ((~~is applicable~~)) applies to all facilities or sites that treat solid waste by composting. This section ((~~is~~)) does not ((~~applicable~~)) apply to:

(i) ((~~Composting used as a treatment for dangerous wastes regulated under chapter 173-303 WAC, Dangerous waste regulation;~~)) Methods of managing organic materials, including composting, or recycling that are excluded from the solid waste handling standards in WAC 173-350-020;

(ii) Composting used as a treatment for ((~~petroleum~~)) contaminated soils regulated under WAC 173-350-320;

(iii) ((~~Treatment of liquid sewage sludge or biosolids in digesters at wastewater treatment facilities regulated under chapter 90.48 RCW, Water pollution control and chapter 70.95J RCW, Municipal sewage sludge - Biosolids;~~

~~(iv) Treatment of other liquid solid wastes in digesters regulated under WAC 173-350-330; and~~)) Anaerobic digesters regulated under WAC 173-350-250, or treatment of other liquid or solid wastes in digesters regulated under WAC 173-350-330;

(iv) Composting of bovine and equine carcasses for producers subject to RCW 70.95.306. Producers that fail to meet the conditions of RCW 70.95.306 will be required to obtain a solid waste handling permit from the jurisdictional health department and must comply with all other conditions of this chapter; and

(v) Composting biosolids when permitted under chapter 173-308 WAC, Biosolids management, when all of the following conditions are met:

(A) The department and jurisdictional health department agree in writing that a biosolids permit issued by the department will be adequate;

(B) When composting biosolids and other organic wastes together, the conditions of the biosolids permit issued by the department meet or exceed the requirements of this chapter and a solid waste permit is not required; and

(C) The jurisdictional health department does not otherwise find that a local solid waste permit is necessary.

(b) ((~~In accordance with RCW 70.95.305, the operation of the following activities in this subsection are subject solely to the requirements of (c) of this subsection and are~~)) Conditionally exempt facilities composting materials and volumes in Table 220-A must meet the conditions listed in Table 220-A, and (c) of this subsection to be conditionally exempt from solid waste handling permitting. Feedstocks not listed in Table 220-A must be approved by the department and jurisdictional health department. For the purposes of this subsection, "material on-site at any one time" includes feedstocks, active composting, curing piles, and composted materials. An owner or operator that does not comply with the terms and conditions of Table 220-A and (c) of this subsection is required to obtain a permit from the jurisdictional health department and ((~~shall~~)) must comply with all other applicable requirements of this chapter. ((~~In addition,~~)) Violations of the terms and conditions of Table 220-A and (c) of this subsection may be subject to the penalty provisions of RCW 70.95.315.

((~~(i) Production of substrate used solely on-site to grow mushrooms;~~

~~(ii) Vermicomposting, when used to process Type 1, Type 2, or Type 3 feedstocks generated on-site;~~

~~(iii) Composting of Type 1 or Type 2 feedstocks with a volume limit of forty cubic yards of material on-site at any time. Material on-site includes feedstocks, partially composted feedstocks, and finished compost;~~

~~(iv) Composting of food waste generated on-site and composted in containers designed to prohibit vector attraction and prevent nuisance odor generation. Total volume of the containers shall be limited to ten cubic yards or less;~~

~~(v) Agricultural composting when all the agricultural wastes are generated on-site and all finished compost is used on-site;~~

~~(vi) Agricultural composting when any agricultural wastes are generated offsite, and all finished compost is used on-site, and total volume of material is limited to one thousand cubic yards on-site at any time. Material on-site includes feedstocks, partially composted feedstocks, and finished compost; and~~

~~(vii) Agricultural composting at registered dairies when the composting is a component of a fully certified dairy nutrient management plan as required by chapter 90.64 RCW, Dairy Nutrient Management Act.~~

~~(viii) Composting of Type 1 or Type 2 feedstocks when more than forty cubic yards and less than two hundred fifty cubic yards of material is on-site at any one time.~~

~~(ix) Agricultural composting, when any of the finished compost is distributed offsite and when it meets the following requirements:~~

~~(A) More than forty cubic yards, but less than one thousand cubic yards of agricultural waste is on-site at any time; and~~

~~(B) Agricultural composting is managed according to a farm management plan written in conjunction with a conservation district, a qualified engineer, or other agricultural professional~~

~~able to certify that the plan meets applicable conservation practice standards in the Washington Field Office Technical Guide produced by the Natural Resources Conservation Service.~~

~~(x) Vermicomposting when used to process Type 1 or Type 2 feedstocks generated offsite. Total volume of materials is limited to one thousand cubic yards on-site at any one time.~~))

Table 220-A Terms and Conditions for Solid Waste Permit Exemptions

	Organic Materials	Volume	Specific Requirements for Activity or Operation
(1)	! Post-consumer food waste ! Preconsumer vegetative food waste ! Preconsumer animal-based waste ! Yard debris ! Bulking agents ! Manufactured organics	Up to 20 cubic yards of all material on-site at any one time, not to exceed 100 cubic yards processed in a calendar year.	(a) Materials may be generated on- or off-site. Bulking materials such as wood chips may be generated off-site when used as part of the compost process. (b) Active composting must occur in containers designed to prevent vector attraction and nuisance odors.
(2)	! Yard debris ! Crop residues ! Manure and bedding ! Bulking agents	Up to 500 cubic yards of material on-site at any one time, not to exceed 2,500 cubic yards processed in a calendar year.	(a) Thirty days prior to operation, facilities managing more than 20 cubic yards of organic materials on-site at any one time must submit a notification of intent to operate as a conditionally exempt composter to the jurisdictional health department and the department. Notice of intent must be submitted on a form provided by the department. (b) Facilities managing more than 20 cubic yards of organic materials on-site at any one time and that distribute composted materials off-site must meet the following conditions: (i) Manage the operation to reduce pathogens as indicated by testing for fecal coliform or salmonella at limits set by Table 220-B; (ii) Conduct compost analysis according to the requirements of Table 220-B. Compost testing frequency is based on volume of compost produced annually as required by subsection (4)(a)(x)(B) of this section; and

	Organic Materials	Volume	Specific Requirements for Activity or Operation
			(iii) Submit annual reports and results of composted material analysis to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.
(3)	! Agricultural wastes ! Yard debris ! Bulking agents	! Up to 1,000 cubic yards of agricultural wastes and bulking agents on-farm at any one time, and up to 50% of organic materials on-farm can be yard debris.	(a) Agricultural farms managing more than 20 cubic yards of imported yard debris on-site at any one time must meet the following conditions. Thirty days prior to operation, facilities must submit a notification of intent to operate as a conditionally exempt composter to the jurisdictional health department and the department. Notification must be submitted on a form provided by the department; (b) If agricultural farm is only managing agricultural waste and not distributing composted material off farm, then notification in (3)(a)~~(i)~~ of this table is not required. (c) Agricultural farms managing more than 20 cubic yards of organic materials on-farm at any one time and distributing composted material off-site must meet the following conditions: (i) Meet the conditions of (3)(a)~~(i)~~ of this table; (ii) Manage operation to reduce pathogens as indicated by testing for fecal coliform or salmonella at limits set by Table 220-B of this section; (iii) Conduct compost analysis according to the requirements of Table 220-B. Compost testing frequency is based on volume of compost produced annually as required by subsection (4)(a)(x)(B) of this section; and (iv) Submit annual reports and results of composted material analysis to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.

	Organic Materials	Volume	Specific Requirements for Activity or Operation
(4)	! Agricultural wastes ! Bulking agents	No limits when only agricultural wastes and bulking agents are processed on-farm.	(a) For composting at a dairy, composting must occur as part of an updated dairy nutrient management plan as required by chapter 90.64 RCW, Dairy Nutrient Management Act. (b) For composting at a farm other than a dairy, composting must occur as part of an updated farm management plan written in conjunction with a conservation district, a qualified engineer, or other agricultural professional able to certify that the plan meets applicable conservation practice standards in the USDA Washington Field Office Technical Guide, Code 317, produced by the Natural Resources Conservation Service. (c) Facilities managing more than 20 cubic yards of organic materials on-farm at any one time and distributing composted material off farm must meet the following conditions: (i) Thirty days prior to operation, facilities must submit a notification of intent to operate as a conditionally exempt composter to the jurisdictional health department and the department. Notification must be submitted on a form provided by the department; (ii) Manage the operation to reduce pathogens as indicated by testing for fecal coliform or salmonella at limits set by Table 220-B of this section; (iii) Conduct compost analysis according to the requirements of Table 220-B. Compost testing frequency is based on volume of compost produced annually as required by subsection (4)(a)(x)(B) of this section; and (iv) Submit annual reports and results of composted material analysis to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.

(c) Composting operations managing the types and volumes of materials identified in ((~~subsection (b) shall be managed according to~~)) Table 220-A must meet the following terms and conditions to maintain their exempt status:

(i) Comply with the performance standards of WAC 173-350-040;

(ii) ((~~Protect surface water and groundwater through the use of best management practices and all known available and reasonable methods of prevention, control, and treatment as appropriate. This includes, but is not limited to, setbacks from wells, surface waters, property lines, roads, public access areas, and site-specific setbacks when appropriate;~~)) Manage the operation to prevent the migration of agricultural pests identified by local horticultural pest and disease control boards, as applicable;

(iii) Control nuisance odors to prevent migration beyond property boundaries;

(iv) Manage the operation to prevent attraction of flies, rodents, and other vectors;

(v) ((~~Conduct an annual analysis, prepared in accordance with the requirements of subsection (4)(a)(viii) of this section, for composted material that is distributed offsite from categorically exempt facilities described in subsection (1)(b)(vii) through (ix) of this section.~~)) Ensure that at least fifty percent of the composted material on-site is used within one year and composted material is not stockpiled for more than three years (documented through annual reporting as required in Table 220-A and section (1)(c)(vi);

(vi) Prepare and submit an annual report to the department and the jurisdictional health department by April 1st of each calendar year for ((~~categorically~~)) exempt facilities ((~~described~~)) as required in ((~~subsection (1)(b)(vii) through (ix) of this section. Annual reports are not required for facilities operating under the permit exemption provided in (b)(vii) of this subsection if the composted material is not distributed offsite~~)) Table 220-A. The annual report ((~~shall~~)) must be on forms supplied by the department and ((~~shall~~)) must detail facility activities during the previous calendar year and ((~~shall~~)) must include the following information:

(A) Name and address of the facility;

(B) Calendar year covered by the report;

(C) Annual quantity and type of feedstocks received and compost produced, in cubic yards or tons;

(D) Annual quantity of composted material sold or distributed, in cubic yards or tons;

(E) Results of the annual analysis of composted material required by ((~~subsection (1)(c)(v) of this section~~)) Table 220-A; and

(F) Any additional information required by written notification of the department((~~.~~)); and

(vii) Allow the department or the jurisdictional health department to inspect the site at reasonable times((~~;~~

~~(viii) For activities under (b)(viii) through (x) of this subsection, and registered dairies where compost is distributed offsite, the department and jurisdictional health department shall be notified in writing thirty days prior to beginning any~~

~~composting activity. Notification shall include name of owner or~~

~~operator, location of composting operation and identification of feedstocks~~)).

(2) Composting facilities - Location standards (permit requirements). There are no specific location standards for composting facilities subject to this chapter; however, composting facilities must meet the requirements ((~~provided~~)) of other federal, state, or local laws and regulations that apply under WAC 173-350-040(5).

Note: When considering compost facility location, please review the U.S. Department of Transportation Federal Aviation Advisory Circular. No. 150/5200-33B 2007.

(3) Composting facilities - Design standards (permit requirements). ((~~The owner or operator of a composting facility shall prepare engineering reports/plans and specifications, including a construction quality assurance plan, to address the design standards of this subsection. Scale drawings of the facility including the location and size of feedstock and finished product storage areas, compost processing areas, fixed equipment, buildings, leachate collection devices, access roads and other appurtenant facilities; and design specifications for compost pads, storm water run-on prevention system, and leachate collection and conveyance systems shall be provided. All composting facilities shall be designed and constructed to meet the following requirements:~~

~~(a) When necessary to provide public access, all-weather roads shall be provided from the public highway or roads to and within the compost facility and shall be designed and maintained to prevent traffic congestion, traffic hazards, dust and noise pollution;~~

~~(b) Composting facilities shall separate storm water from leachate by designing storm water run-on prevention systems, which may include covered areas (roofs), diversion swales, ditches or other designs to divert storm water from areas of feedstock preparation, active composting and curing;~~

~~(c) Composting facilities shall collect any leachate generated from areas of feedstock preparation, active composting and curing. The leachate shall be conveyed to a leachate holding pond, tank or other containment structure. The leachate holding structure shall be of adequate capacity to collect the amount of leachate generated, and the volume calculations shall be based on the facility design, monthly water balance, and precipitation data. Leachate holding ponds and tanks shall be designed according to the following:~~

~~(i) For leachate ponds at registered dairies, the design and installation shall meet Natural Resources Conservation Service standards for a waste storage facility in the Washington Field Office Technical Guide.~~

~~(ii) For leachate ponds at composting facilities other than registered dairies, the pond shall be designed to meet the following requirements:~~

~~(A) Have a liner consisting of a minimum 30 mil thickness geomembrane overlying a structurally stable foundation to support the liners and the contents of the impoundment. High density~~

~~polyethylene geomembranes used as primary liners or leak detection liners shall be at least 60-mil thick to allow for proper welding. The jurisdictional health department may approve the use of alternative designs if the owner or operator can demonstrate during the permitting process that the proposed design will prevent migration of solid waste constituents or leachate into the ground or surface waters at least as effectively as the liners described in this subsection;~~

~~(B) Have dikes and slopes designed to maintain their structural integrity under conditions of a leaking liner and capable of withstanding erosion from wave action, overfilling, or precipitation;~~

~~(C) Have freeboard equal to or greater than eighteen inches to avoid overtopping from wave action, overfilling, or precipitation. The jurisdictional health department may reduce the freeboard requirement provided that other engineering controls are in place which prevent overtopping. These engineering controls shall be specified during the permitting process;~~

~~(D) Leachate ponds that have the potential to impound more than ten-acre feet (three million two hundred fifty-nine thousand gallons) of liquid measured from the top of the dike and which would be released by a failure of the containment dike shall be reviewed and approved by the dam safety section of the department.~~

~~(iii) Tanks used to store leachate shall meet design standards in WAC 173-350-330 (3)(b).~~

~~(d) Composting facilities shall be designed with process parameters and management procedures that promote an aerobic composting process. This requirement is not intended to mandate forced aeration or any other specific composting technology. This requirement is meant to ensure that compost facility designers take into account porosity, nutrient balance, pile oxygen, pile moisture, pile temperature, and retention time of composting when designing a facility.~~

~~(e) Incoming feedstocks, active composting, and curing materials shall be placed on compost pads that meet the following requirements:~~

~~(i) All compost pads shall be curbed or graded in a manner to prevent ponding, run-on and runoff, and direct all leachate to collection devices. Design calculations shall be based upon the volume of water resulting from a twenty-five-year storm event as defined in WAC 173-350-100;~~

~~(ii) All compost pads shall be constructed over soils that are competent to support the weight of the pad and the proposed composting materials;~~

~~(iii) The entire surface area of the compost pad shall maintain its integrity under any machinery used for composting activities at the facility; and~~

~~(iv) The compost pad shall be constructed of materials such as concrete (with sealed joints), asphaltic concrete, or soil cement to prevent subsurface soil and groundwater contamination;~~

~~(v) The jurisdictional health department may approve other materials for compost pad construction if the permit applicant is able to demonstrate that the compost pad will meet the requirements~~

~~of this subsection.~~)) Composting facilities must be designed and constructed to meet the requirements of this subsection.

(a) Composting facilities must be designed and constructed such that:

(i) The facility can be operated to meet the performance standard requirements in WAC 173-350-040; and

(ii) The facility can be operated to promote controlled, aerobic decomposition. This requirement is intended to ensure that compost facility designers take into account porosity, nutrient balance, pile oxygen, pile moisture, pile temperature, and retention time of composting when designing a facility. It is not intended to mandate forced aeration or any other specific composting technology.

(b) The owner or operator of a composting facility must prepare and provide to the jurisdictional health department engineering reports, plans, and specifications that address the design standards of this subsection. The reports, plans, and specifications must be prepared by an engineer licensed in the state of Washington, and must include:

(i) An engineering report that presents the design basis and calculations for the engineered features of the facility including, but not limited to: Pad, impoundments, storm water management features, leachate management features, and aeration and emission control features as required by the permitting air authority where applicable. The engineering report must demonstrate that the proposed design will meet the performance standards of this chapter;

(ii) Scale drawings of the facility including the location and size of feedstock and composted material storage areas, compost processing areas, fixed equipment, buildings, storm water management features where applicable, access roads, and other constructed areas and buildings integral to facility operation;

(iii) Design specifications for the engineered features of the facility including, but not limited to, pads, storm water management features, leachate management features, and aeration and emission management features as required by a permitting air authority where applicable; and

(iv) A construction quality assurance plan that describes monitoring, testing, and documentation procedures that will be performed during construction of the facility to ensure the facility is constructed in accordance with the approved design.

(c) When operations require public access, all-weather roads must be provided from the highway or roads to and within the compost facility and must be designed and maintained to prevent traffic congestion, traffic hazards, dust, and noise pollution.

(d) Compost facilities must manage storm water and leachate to meet the standards of this section and of any federal, state, and local water, and air quality permits.

(e) Composting facilities must minimize the production of leachate and runoff by designing storm water management features such as run-on prevention systems, which may include covered areas (roofs), diversion swales, ditches, or other features designed to divert storm water from areas of feedstock preparation, active

composting, and curing.

(i) Composting facilities must manage any leachate generated at the facility by providing leachate management features. The leachate management features include, but are not limited to, leachate collection, conveyance, and storage structures, or treatment systems. Leachate must be collected from areas of feedstock preparation, active composting, and curing, and be conveyed to a leachate storage structure or treatment system. Any discharges to ground that result in contaminants migrating to groundwater require a waste discharge permit under chapter 90.48 RCW, Water pollution control, prior to discharge. Discharges to ground that result in degradation of groundwater quality are prohibited under chapter 90.48 RCW, Water pollution control. Any discharge to sanitary sewer requires additional permitting by the local delegated authority or department;

(ii) Storm water and leachate collection and conveyance structures must be designed based on the volume of water resulting from a twenty-five-year storm event as defined in WAC 173-350-100;

(iii) Leachate storage structures such as ponds or tanks must be of adequate capacity to store the normal maximum volume of leachate generated by the facility. The normal maximum volume will be established based on the following conditions:

(A) Facility design;

(B) Normal climatic precipitation and evaporation data for the location of the facility;

(C) Monthly leachate reuse or removal; and

(D) A factor of safety to accommodate variability of actual conditions from normal conditions.

(iv) Leachate holding ponds and tanks must be designed according to the following:

(A) Leachate ponds at registered dairies must meet Natural Resources Conservation Service standards for a waste storage facility in the 2001 (revised June 2011) Washington Field Office Technical Guide (Code 313).

(B) Leachate ponds at composting facilities other than registered dairies must be designed to meet the following requirements:

(I) Have a liner consisting of a minimum 30-mil thickness geomembrane on a subgrade that provides sufficient bearing capacity to support the liner and the contents of the pond. A liner constructed with a high density polyethylene geomembrane must be at least 60-mil thick to allow for proper welding. The jurisdictional health department may approve the use of an alternative liner design if the owner or operator can demonstrate during the permitting process that the proposed design will prevent migration of solid waste constituents or leachate into the ground or surface waters at least as effectively as the liners described in this subsection;

(II) Have dikes and slopes designed to maintain their structural integrity under conditions of a leaking liner and capable of withstanding erosion from wave action, overfilling, or precipitation;

(III) Have freeboard (distance between the liquid level and

the top of the pond) equal to or greater than eighteen inches to avoid overtopping from wave action, overfilling, or precipitation. The jurisdictional health department may reduce the freeboard requirement provided that other engineering controls are in place that prevent overtopping. These engineering controls must be specified during the permitting process; and

(IV) Leachate ponds that have the potential to impound more than ten-acre feet (three million two hundred fifty-nine thousand gallons) of liquid measured from the top of the dike and which would be released by a failure of the containment dike must be reviewed and approved by the dam safety section of the department.

(C) Tanks used to store leachate must meet design standards in WAC 173-350-330 (3)(b).

(f) Incoming feedstocks, active composting, and curing materials must be placed on pads that prevent contamination of soil or groundwater underlying or adjacent to the pads. Pads must meet the following requirements:

(i) All pads must be curbed or graded in a manner to prevent ponding, to control run-on and runoff, and to separately collect and convey all storm water and leachate to separate storage or holding systems. Storm water that is combined with leachate must be managed as leachate in accordance with this section;

(ii) All pads must be constructed on subgrades that provide sufficient bearing capacity to support the weight of the pad, the materials placed on them, and the equipment used in handling the materials;

(iii) The entire surface area of the pad must be designed to maintain its structural and hydraulic integrity against loads resulting from any machinery used for feedstock and compost handling activities, and from surface wear or damage caused by feedstock and compost handling, or by active composting at the facility;

(iv) The pad may be constructed of materials such as concrete (with sealed joints), asphaltic concrete, or soil cement that prevents subsurface soil and groundwater contamination;

(v) The jurisdictional health department may allow pads for compost facilities to be designed and constructed with materials other than those listed in (f)(iv) of this subsection, provided the applicant demonstrates in the engineering report to the jurisdictional health department's and the department's satisfaction that the alternative pad provides sufficient protection to meet the performance standards of this section and of WAC 173-350-040.

(4) Composting facilities - Operating standards (permit requirements). The owner or operator of a composting facility ((~~shall~~)) must:

(a) Operate the facility to:

(i) Control air contaminants such as dust((~~,~~)) and nuisance odors((~~, and~~)) to prevent other contaminants ((~~to prevent migration of air contaminants~~)) from migrating beyond property boundaries in accordance with WAC 173-350-040(4);

(ii) Prevent the attraction of vectors;

(iii) ((~~Ensure that only feedstocks identified in the approved~~

~~plan of operation are accepted at the facility;~~)) Prevent the migration of agricultural pests identified by local pest and disease control boards, as applicable;

(iv) Ensure ((~~the facility operates under the supervision and control of a properly trained individual during all hours of operation, and~~)) access to the facility is restricted when the facility is closed;

(v) ((~~Ensure facility employees are trained in appropriate facility operations, maintenance procedures, and safety and emergency procedures according to individual job duties and according to an approved plan of operation;~~

~~(vi) Implement and document pathogen reduction activities when Type 2, 3 or 4 feedstocks are composted. Documentation shall include compost pile temperature and notation of turning as appropriate, based on the composting method used. Pathogen reduction activities shall at a minimum include the following:~~

~~(A) In vessel composting - the temperature of the active compost pile shall be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for three days; or~~

~~(B) Aerated static pile - the temperature of the active compost pile shall be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for three days; or~~

~~(C) Windrow composting - the temperature of the active compost pile shall be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for fifteen days or longer. During the period when the compost is maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher, there shall be a minimum of five turnings of the windrow; or~~

~~(D) An alternative method that can be demonstrated by the owner or operator to achieve an equivalent reduction of human pathogens;~~

~~(vii) Monitor the composting process according to the plan of operation submitted during the permitting process. Monitoring shall include inspection of incoming loads of feedstocks and pathogen reduction requirements of (a)(vi) of this subsection; and~~

~~(viii) Analyze composted material for:~~

~~(A) Metals in Table A at the minimum frequency listed in Table C. Compost facilities composting only Type 1 and Type 2 feedstocks are not required to test for molybdenum and selenium. Testing frequency is based on the feedstock type and the volume of feedstocks processed per year;~~

~~(B) Parameters in Table B at the minimum frequency listed in Table C. Testing frequency is based on the feedstock type and the volume of feedstocks processed per year;~~

~~(C) Nitrogen content at the minimum frequency listed in Table C; and~~

~~(D) Biological stability as outlined in United States Composting Council Test Methods for the Examination of Composting and Compost at the minimum frequency listed in Table C;~~

~~(E) The jurisdictional health department may require testing of additional metal or contaminants, and/or modify the frequency of testing based on historical data for a particular facility, to~~

~~appropriately evaluate the composted material.~~)) Ensure that only feedstocks identified in the approved plan of operation are accepted at the facility;

(vi) Ensure the facility operates under the supervision and control of a properly trained individual(s) during all hours of operation:

(A) Facility supervisors responsible for daily operation must receive training, or be able to document prior training, in the basics of composting within the first year of supervising the facility. Training must consist of classroom and hands-on course work and conclude with a certificate of completion that must be kept on-site at all times. Appropriate compost training can be obtained through organizations such as the Washington ~~O~~organic ~~R~~recycling ~~C~~ouncil, the Solid Waste Association of North America, the U.S. Composting Council, or other training as approved by the jurisdictional health department.

(B) Ensure facility employees are trained in appropriate facility operations, maintenance procedures, and safety and emergency procedures according to individual job duties and according to an approved plan of operation. A trained supervisor may provide appropriate training to employees responsible for daily operations.

(vii) Implement and document pathogen reduction activities. Documentation must include compost pile temperatures representative of the composting materials, and notation of turnings as appropriate, based on the composting method used. Pathogen reduction activities must at a minimum include the following:

(A) In vessel composting - The temperature of the active compost pile must be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for three consecutive days (seventy-two hours); or

(B) Aerated static pile must have a cover to ensure that pathogen reduction temperatures are reached and vectors are controlled - The temperature of the active compost pile must be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for three consecutive days (seventy-two hours); or

(C) Windrow composting - The temperature of the active compost pile must be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for fifteen days or longer. During the period when the compost is maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher, there must be a minimum of five turnings of the windrow; or

(D) An alternative method of composting that can be demonstrated by the owner or operator to achieve an equivalent reduction of human pathogens.

(viii) Monitor the composting process according to the plan of operation submitted during the permitting process. Monitoring must include inspection of incoming loads of feedstocks and pathogen reduction requirements of (a)(vii) of this subsection;

(ix) Collect composted material samples for analysis that are representative of the pile. Use a sampling method such as

described in the U.S. Composting Council 2002 Test Methods for the Examination of Composting and Compost, Method 02.01-A through E, or as specified; and

(x) Analyze composted material for metals and other testing parameters listed in Table 220-B.

(A) The jurisdictional health department may require additional tests for metals and contaminants;

(B) Testing frequency is based on amount of composted material produced. A representative sample of composted material must be tested for every 5,000 cubic yards produced, or every three hundred sixty-five days, whichever is more frequent. The jurisdictional health department may modify the frequency of testing based on historical data for a particular facility;

(C) Composted material meeting the conditions of subsection (4)(a)(x) and (g)of this section can be stored off of a pad.

Table ((~~A - Metals~~)) 220-B Testing Parameters

Metals and other testing parameters	Limit (mg/kg dry weight), unless otherwise specified
Arsenic	((<=)) # 20 ppm
Cadmium	((<=)) # 10 ppm
Copper	((<=)) # 750 ppm
Lead	((<=)) # 150 ppm
Mercury	((<=)) # 8 ppm
Molybdenum((ㄴ))	((<=)) # 9 ppm
Nickel	((<=)) # 210 ppm
Selenium((ㄴ))	((<=)) # 18 ppm
Zinc	((<=)) # 1400 ppm
Total Nitrogen	No limits
Physical contaminants	< 1 percent by weight total, not to exceed .10 percent film plastic
Sharps	0
Electrical conductivity	No range
Carbon to nitrogen ratio	No range
Moisture at 70EC	No range
Organic matter	No range
pH	5 - 10 (range)
Biological stability	Moderately unstable to very stable
Fecal coliform[1]	< 1,000 Most Probable Number per gram of total solids (dry weight)
OR	
Salmonella	< 3 Most Probable Number per 4 grams of total solids (dry weight)

[1]((~~Not required for composted material made from Type 1, Type 2 or a mixture of Type 1 and Type 2 feedstocks.~~)) Test for either fecal coliform or salmonella.

Note: Biosolids composters regulated under this chapter must communicate with the jurisdictional health department to determine if different testing parameters and testing frequencies are required.

((~~Table B - Other Testing Parameters~~

~~Parameter~~	~~Limit~~
~~Manufactured Inerts~~	~~< 1 percent~~
~~Sharps~~	~~0~~
~~pH~~	~~5 - 10 (range)~~
~~Fecal Coliform~~	~~< 1,000 Most Probable Number per gram of total solids (dry weight).~~
~~Salmonella~~	~~< 3 Most Probable Number per 4 grams of total solids (dry weight).~~

~~Table C - Frequency of Testing Based on Feedstocks Received~~

~~Feedstock Type~~	~~< 5,000 cubic yards~~	~~= or > 5,000 cubic yards~~
~~Type 1~~ ~~or~~ ~~Type 2~~	~~Once per year~~	~~Every 10,000 cubic yards or every six months whichever is more frequent~~
~~Type 3~~	~~Once per quarter (four times per year)~~	~~Every 5,000 cubic yards or every other month whichever is more frequent~~
~~Type 4~~	~~Every 1,000 cubic yards~~	~~Every 1,000 cubic yards or once per month whichever is more frequent~~))

(b) Inspect the facility to prevent malfunctions and deterioration, operator errors and discharges((~~, which~~)) that may cause or lead to the release of waste to the environment or a threat to human health. Inspections ((~~shall~~)) must be conducted at least weekly, unless an alternate schedule is approved by the jurisdictional health department as part of the permitting process.

(c) For compost facilities with leachate holding ponds, conduct regular liner inspections at least once every five years, unless an alternate schedule is approved by the jurisdictional health department as part of the permitting process. The frequency of inspections ((~~shall~~)) must be specified in the operations plan and ((~~shall~~)) must be based on the type of liner, expected service

life of the material, and the site-specific service conditions.((~~. The jurisdictional health department shall be given sufficient notice and have the opportunity to be present during liner inspections. An inspection log or summary shall be kept at the facility or other convenient location if permanent office facilities are not on-site, for at least five years from the date of inspection. Inspection records shall be available to the jurisdictional health department upon request.~~

~~(c) Maintain daily operating records of the following~~)):

(i) ((~~Temperatures and compost pile turnings for Type 2, Type 3 and Type 4 feedstocks;~~

~~(ii) Additional process monitoring data as prescribed in the plan of operation; and~~

~~(iii) Results of laboratory analyses for composted materials as required in (a)(viii) of this subsection. Facility inspection reports shall be maintained in the operating record. Significant deviations from the plan of operation shall be noted in the operating record. Records shall be kept for a minimum of five years and shall be available upon request by the jurisdictional health department.~~

~~(d) Prepare and submit a copy of an annual report to the jurisdictional health department and the department by April 1st on forms supplied by the department. The annual report shall detail the facility's activities during the previous calendar year and shall include the following information:~~

~~(i) Name and address of the facility;~~

~~(ii) Calendar year covered by the report;~~

~~(iii) Annual quantity and type of feedstocks received and compost produced, in tons;~~

~~(iv) Annual quantity of composted material sold or distributed, in tons;~~

~~(v) Annual summary of laboratory analyses of composted material; and~~

~~(vi) Any additional information required by the jurisdictional health department as a condition of the permit.~~

~~(e) Develop, keep and abide by a plan of operation approved as part of the permitting process. The plan of operation shall convey to site personnel the concept of operation intended by the designer. The plan of operation shall be available for inspection at the request of the jurisdictional health department. If necessary, the plan shall be modified with the approval, or at the direction of the jurisdictional health department. Each plan of operation shall include the following:~~

~~(i) List of feedstocks to be composted, including a general description of the source of feedstocks;~~

~~(ii) A description of how wastes are to be handled on-site during the facility's active life including:~~

~~(A) Acceptance criteria that will be applied to the feedstocks;~~

~~(B) Procedures for ensuring that only the waste described will be accepted;~~

~~(C) Procedures for handling unacceptable wastes;~~

~~(D) Mass balance calculations for feedstocks and amendments to~~

~~determine an acceptable mix of materials for efficient decomposition;~~

~~(E) Material flow plan describing general procedures to manage all materials on-site from incoming feedstock to finished product;~~

~~(F) A description of equipment, including equipment to add water to compost as necessary;~~

~~(G) Process monitoring plan, including temperature, moisture, and porosity;~~

~~(H) Pathogen reduction plan for facilities that accept Type 2, Type 3, and Type 4 feedstocks;~~

~~(I) Sampling and analysis plan for the final product;~~

~~(J) Nuisance odor management plan (air quality control plan);~~

~~(K) Leachate management plan, including monthly water balance; and~~

~~(L) Storm water management plan;~~

~~(iii) A description of how equipment, structures and other systems are to be inspected and maintained, including the frequency of inspections and inspection logs;~~

~~(iv) A neighbor relations plan describing how the owner or operator will manage complaints;~~

~~(v) Safety, fire and emergency plans;~~

~~(vi) Forms for recordkeeping of daily weights or volumes of incoming feedstocks by type and finished compost product, and process monitoring results; and~~

~~(xvii) Other such details to demonstrate that the facility will be operated in accordance with this subsection and as required by the jurisdictional health department.~~)) Inspect the liner for degradation and ruptures of the liner material and for failure of any seams or joints in the liner material. If the maximum wetted extent of the liner geomembrane cannot be directly inspected visually, then the liner must be tested for leaks by electrical leak detection survey methods. If leaks, degradation, or ruptures of the liner material are detected, the liner must be repaired; and

(ii) The jurisdictional health department must be given sufficient notice and have the opportunity to be present during liner inspections. An inspection record must be kept at the facility or other convenient location if permanent office facilities are not on-site, for at least five years from the date of inspection. Inspection records must be available to the jurisdictional health department upon request.

(d) Maintain operating records of the following:

(i) Daily temperatures representative of compost piles;

(ii) Additional process monitoring data as prescribed in the plan of operation;

(iii) Results of analyses for composted materials as required in (a)(x) of this subsection and Table 220-B; and

(iv) Facility inspection reports must be maintained in the operating record. Significant deviations from the plan of operation must be noted in the operating record. Records must be kept for a minimum of five years and must be available upon request by the jurisdictional health department.

(e) Prepare and submit a copy of an annual report to the jurisdictional health department and the department by April 1st of

each calendar year on forms provided by the department. The annual report must detail the facility's activities during the previous calendar year and must include the following information:

(i) Name and address of the facility;

(ii) Calendar year covered by the report;

(iii) Annual quantity and type of feedstocks received and compost produced, in cubic yards or tons;

(iv) Annual quantity of composted material sold or distributed, in cubic yards or tons;

(v) Annual summary of laboratory analysis of composted material; and

(vi) Any additional information required by the jurisdictional health department as a condition of the permit.

(f) Develop, keep, and follow a plan of operation approved as part of the permitting process. The plan of operation must convey to site personnel the concept of operation intended by the designer. The plan of operation must be kept on-site and be available for inspection at the request of the jurisdictional health department. If necessary, the plan must be modified with the approval, or at the direction of the jurisdictional health department. Each plan of operation must include the following:

(i) List of feedstocks to be composted, including a general description of the source of feedstocks. Feedstocks must be approved by the department or jurisdictional health department;

(ii) A plan to control air contaminants such as dust and nuisance odors to prevent contaminants from migrating beyond property boundaries in accordance with WAC 173-350-040(4), including:

(A) A plan to document nuisance odor complaints should they arise. The plan must include date and time of complaints, weather conditions, and operations at the facility at the time of the complaint;

(B) A progressive odor management plan that must include a description of facility and operational improvements that could be made if nuisance odors are identified beyond the facility's property boundary, as determined by the jurisdictional health department, the department, or the air authority. The description must address the receiving, composting, curing, and storage areas of the facility. Facilities will have eighteen months after the effective date of this chapter to complete the progressive odor management section of their plan of operation;

Comment [E2]: Recommend that this be reduced to 12 months given the long standing odor problems encountered at Cedar Grove Compost.

(C) A description of facility maintenance activities that encompass nuisance odor prevention and control, such as acquiring critical odor control backup equipment in the event of a breakdown, a schedule for purging aeration lines and changing biofilter media as appropriate, and a schedule for cleaning leachate ponds or leachate storage tanks as appropriate; and

(D) A description of how feedstocks with high moisture or the potential for high odors will be managed to reduce nuisance odors upon receipt, and through the composting process.

(iii) A description of how wastes and organic materials including incoming feedstocks, composting, curing, and composted materials are to be handled on-site during the facility's active

life, including:

(A) Maximum capacity in cubic yards for all materials on-site at any one time. The jurisdictional health department may require cumulative capacity for materials or separate capacities for incoming feedstocks, composting, curing, and composted materials, or any combination;

(B) Throughput in tons or cubic yards of solid waste feedstocks processed in a given amount of time. The jurisdictional health department may require monthly or annual throughput;

(C) Procedures and criteria for ensuring that only the feedstocks described will be accepted. This includes a plan for rejecting feedstocks contaminated with greater than five percent physical contaminants by volume, or a plan to accept and separate contaminated loads from noncontaminated loads, and reduce physical contaminants to an acceptable level prior to composting;

(D) Procedure to reduce physical contaminants in composted material to meet testing parameters in Table 220-B. Grinding to reduce the size of physical contaminants does not meet the requirements of this section;

(E) Procedures for handling unacceptable wastes;

(F) Mass balance calculations for feedstocks and amendments to determine an acceptable mix of materials for efficient decomposition;

(G) Material flow plan describing general procedures to manage all materials on-site from incoming feedstock to composted material;

(H) A description of equipment, including equipment to add water to compost as necessary;

(I) Compost process monitoring plan, including compost mix (carbon to nitrogen ratio), temperature, moisture, and porosity;

(J) Pathogen reduction plan;

(K) Representative sampling and analysis plan for the composted material such as described in the 2002 U.S. Composting Council Test Methods for the Examination of Composting and Compost Method 02.01-A through E;

(L) Leachate management plan, including monthly precipitation and evaporation data, and if applicable, monthly leachate reuse or removal; and

(M) Storm water management plan.

(iv) A description of how equipment, structures, and other systems are to be inspected and maintained, including the frequency of inspections and inspection logs;

(v) A description of how facility staff will receive appropriate training in the operation of the facility, including how they will be trained to identify nuisance odors and how to correct them;

(vi) A community relations plan describing how the owner or operator will document and manage complaints;

(vii) Safety, fire, and emergency plans;

(viii) Forms for recordkeeping of daily volumes or weights of incoming feedstocks by type, outgoing composted material, and process monitoring results; and

(ix) Other details to demonstrate that the facility will be

operated in accordance with this subsection and as required by the jurisdictional health department.

(g) Manage composted material piles that have met the testing parameters in Table 220-B in the following manner:

(i) Comply with the performance standards of WAC 173-350-040; and

(ii) Minimize and control runoff from composted material piles through the use of covers, diversion swales, berms, ditches, or other features designed to prevent runoff and divert storm water from compost material; and

(iii) Minimize odor by maintaining porosity of composted material piles and managing moisture levels in composted material piles, not to exceed sixty percent moisture.

(5) Composting facilities - Groundwater monitoring requirements (permit requirements). There are no specific groundwater monitoring requirements for composting facilities subject to this chapter; however, composting facilities must meet the requirements ((~~provided~~)) of other federal, state, or local laws and regulations that apply under WAC 173-350-040(5).

(6) Composting facilities - Closure requirements (permit requirements). The owner or operator of a composting facility ((~~shall~~)) must:

(a) Notify the jurisdictional health department sixty days in advance of closure. At closure, the facility owner or operator is financially responsible for the removal of all solid waste, including but not limited to, raw or partially composted feedstocks, composted material and leachate from the facility ((~~shall be removed~~)). The materials must be sent to another facility that ((~~conforms~~)) complies with the applicable regulations for handling the waste.

(b) Develop, keep, and ((~~abide by~~)) follow a closure plan approved by the jurisdictional health department as part of the permitting process. At a minimum, the closure plan ((~~shall~~)) must include methods of removing solid waste, leachate, and other organic materials from the facility. For planning purposes, assume that the facility is at full, permitted capacity at the time of closure.

(7) Composting facilities - Financial assurance requirements (permit requirements). There are no specific financial assurance requirements for composting facilities subject to this chapter; however, composting facilities must meet the requirements ((~~provided~~)) of other federal, state, or local laws and regulations that apply under WAC 173-350-040(5).

(8) Composting facilities - Permit application contents (permit requirements). The owner or operator of a composting facility ((~~shall~~)) must obtain a solid waste permit from the jurisdictional health department. All applications for permits ((~~shall~~)) must be submitted in accordance with the procedures established in WAC 173-350-710. In addition to the requirements of WAC 173-350-710 and 173-350-715, each application for a permit ((~~shall~~)) must contain:

(a) Engineering reports((~~/~~)), plans, and specifications that

address the design standards of subsection (3) of this section;

(b) A plan of operation meeting the requirements of subsection (4) of this section; and

(c) A closure plan meeting the requirements of subsection (6) of this section.

(9) Composting facilities - Construction records (permit requirements). Within thirty days of completing construction, the owner or operator of a composting facility ((~~shall~~)) must provide copies of the construction record drawings for engineered facilities at the site and a report documenting facility construction, including the results of observations and testing carried out as part of the construction quality assurance plan, to the jurisdictional health department and the department. Facilities ((~~shall~~)) must not ((~~commence operation~~)) begin operating until the jurisdictional health department has determined that the construction was completed in accordance with the approved engineering report((~~/~~)), plans, and specifications and has approved the construction documentation in writing.

(10) Composting facilities - Designation of composted materials (permit requirements). When used on-site or distributed off-site, composted materials meeting the ((~~limits for metals in Table A and the~~)) testing parameters of Table 220-B ((~~of this section, and having a stability rating of very stable, stable, or moderately unstable as determined by the analysis required in subsection (4)(a)(viii)(D) of this section, shall no longer be considered a solid waste and shall~~)) are no longer ((~~be~~)) subject to this chapter. Composted materials that do not meet these ((~~limits are still considered solid waste and~~)) requirements are subject to management under chapter 70.95 RCW, Solid waste management--Reduction and recycling.

NEW SECTION

WAC 173-350-225 Other organic material handling activities. (1) In accordance with RCW 70.95.305, activities identified in this section are exempt from solid waste handling permitting when in compliance with the terms and conditions of this section. Any person engaged in the activities in this section that does not comply with the terms and conditions of this section is required to obtain a permit from the jurisdictional health department in accordance with the requirements of WAC 173-350-490. In addition, violations of the terms and conditions of this subsection may be subject to the penalty provisions of RCW 70.95.315.

Table 225-A Terms and Conditions for Solid Waste Permit Exemptions

	Organic Materials	Volume	Specific Requirements for Activity or Operation
(1)	! Postconsumer food waste ! Preconsumer vegetative food waste ! Preconsumer animal-based waste ! Yard debris ! Crop residues ! Manure and bedding ! Bulking agents	Up to 20 cubic yards of material generated on- or off-site, or up to 1000 cubic yards of material generated on-site at any one time.	Facilities must be managed to promote vermicomposting, and: (a) Thirty days prior to operation, facilities managing more than 20 cubic yards of organic materials on-site at any one time must submit a notification of intent to operate as a conditionally exempt vermicomposter to the jurisdictional health department and the department. Notice of intent must be submitted on a form provided by the department. (b) Facilities managing more than 20 cubic yards of organic materials on-site at any one time and that distribute materials off-site must submit annual reports to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.
(2)	! Preconsumer vegetative food waste ! Yard debris ! Crop residues ! Manure and bedding ! Bulking agents	Up to 1000 cubic yards of material on-site at any one time.	Facilities must be managed to promote vermicomposting, and: (a) Thirty days prior to operation, facilities managing more than 20 cubic yards of organic materials on-site at any one time must submit a notification of intent to operate as a conditionally exempt vermicomposter to the jurisdictional health department and the department. Notice of intent must be submitted on a form provided by the department. (b) Facilities managing more than 20 cubic yards of organic materials on-site at any one time and that distribute materials off-site must submit annual reports to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.
(3)	! Postconsumer food waste ! Preconsumer vegetative food waste ! Preconsumer animal-based waste ! Yard debris ! Crop residues ! Manure and bedding ! Bulking agents	Other conversion technologies managing up to 3000 gallons of liquid or semi-solid organic feedstocks on-site at any one time, when individual tanks or enclosed vessels have a capacity of # 1000 gallons or 20 cubic yards of nonliquid organic feedstocks on-site at any one time.	Other conversion technologies managing more than 1000 gallons liquid or semi-solid or 10 cubic yards of nonliquid material must meet the following conditions: (a) Tanks used must comply with at least one of the following design conditions: (i) Surface impoundment and tank standards, WAC 173-350-330; or (ii) Other engineered design that the owner or operator can demonstrate complies with the conditions of WAC 173-350-040, and is approved by the department. (b) Thirty days prior to operation, facilities must submit a notification of intent to operate as a conditionally exempt facility to the jurisdictional health department and the department. Notification must be submitted on a form provided by the department. (c) Submit annual reports to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.

	Organic Materials	Volume	Specific Requirements for Activity or Operation
			(d) For material being distributed off-site, the following conditions apply: (i) Sample and test material every 5,000 cubic yards or twice yearly, whichever is more frequent, to demonstrate it meets compost quality standards of WAC 173-350-220(4) (Table 220-B) before it is distributed for off-site use; or (ii) Ensure material meets the conditions for a commercial fertilizer as applicable in chapter 15.54 RCW; or (iii) Send material to a compliant permitted or conditionally exempt compost facility for further treatment to meet compost quality standards; or (iv) Land apply material in accordance with WAC 173-350-230, Land application; or (v) Use material in accordance with WAC 173-350-200, Beneficial use permit exemption; or (vi) Process or manage material in an alternate manner approved by the department or the jurisdictional health department.

(2) Facilities managing under the rules and volumes of material described in Table 225-A above are conditionally exempt facilities when they meet the following conditions:

(a) Comply with the performance standards, WAC 173-350-040;

(b) Manage the operation to prevent attraction of flies, rodents, and other vectors;

(c) Control nuisance odors to prevent migration beyond property boundaries; and

(d) Manage the operation to prevent the migration of agricultural pests identified by local horticultural pest and disease control boards, as applicable.

NEW SECTION

WAC 173-350-250 Anaerobic digesters. (1) Anaerobic digesters - Applicability. This section applies to all facilities or sites that treat solid waste by anaerobic digestion, except (a), (b), and (c) of this subsection:

(a) Storage or treatment of solid or liquid wastes in surface impoundments or tanks regulated under WAC 173-350-330;

(b) Anaerobic digesters regulated in accordance with chapter 90.48 RCW, Water pollution control; and

(c) Anaerobic digesters regulated in accordance with chapter 173-308 WAC, Biosolids management.

(2) Anaerobic digester - Permit exemptions. In accordance with RCW 70.95.305, anaerobic digester facilities processing the

types and volumes of materials identified in Table 250-A are subject solely to the requirements of Table 250-A and (b) of this subsection and are exempt from solid waste handling permitting. Feedstocks not listed in Table 250-A must be approved by the department. Violations of the terms and conditions of Table 250-A and (b) of this subsection may be subject to penalty provisions of RCW 70.95.315.

(a) An owner or operator that does not comply with the terms and conditions of Table 250-A and (b) of this subsection must:

- Obtain a solid waste handling permit from the jurisdictional health department; and
- Comply with all applicable requirements of this chapter.

Table 250-A Terms and Conditions for Exemptions

	Feedstocks	Volumes	Conditions
(1)	Livestock manure; organic feedstocks.	No limits when livestock manure is at least 50% of total feedstocks volume, and imported, nonmanure organic feedstocks are not greater than 30% of total feedstock volume.	(a) All imported organic feedstocks must be fed into the anaerobic digester within 36 hours;
	May include livestock manure that is imported, which means originating off of the farm or site where the anaerobic digester is being operated. For the purposes of this exemption (Table 250-A (1)), organic feedstocks do not include materials collected from municipal, commercial, or residential solid waste collection programs.		(b) All organic materials must be received and stored in a structure(s) that:
			(i) Complies with the Natural Resources Conservation Service's Practice Standard Code 313 in effect as of July 26, 2009, or other approved storage construction standard approved by the department or the jurisdictional health department;
			(ii) Is certified by a representative of the Natural Resources Conservation Service to be effective at protecting surface and groundwater; or

	Feedstocks	Volumes	Conditions
			(iii) Meets applicable construction industry standards adopted by the American Concrete Institute or the American Institute of Steel Construction in effect as of July 26, 2009; and (iv) Prevents migration of nuisance odors beyond property boundaries and minimizes attraction of flies, rodents, and other vectors; (c) All imported organic materials must be preconsumer; (d) If imported organic feedstocks are likely to contain animal by-products, they must be previously source separated at a facility licensed to process food by the United States Department of Agriculture, the United States Food and Drug Administration, the Washington state department of agriculture, or other applicable regulatory agency; (e) If imported organic feedstock contains bovine processing waste, it must be derived from animals approved by the United States Department of Agriculture Food Safety and Inspection Service and not contain any specified risk material, defined as: Skull, brain, trigeminal ganglia (nerves attached to brain and close to the skull exterior), eyes, spinal cord, distal ileum (a part of the small intestine), and the dorsal root ganglia (nerves attached to the spinal cord and close to the vertebral column) of cattle aged 30 months or older; (f) Imported organic feedstocks cannot contain sheep carcasses or sheep processing waste;

Comment [E3]: This will be extremely difficult to monitor and regulate. Suggest removal of bovine processing wastes.

	Feedstocks	Volumes	Conditions
			(g) The anaerobic digester must be designed and operated in accordance with standards in the Natural Resources Conservation Service's Conservation Practice Standard, Code 366, in effect as of July 26, 2009; (h) Digestate must: (i) Be managed in accordance with a dairy nutrient management plan under chapter 90.64 RCW or a farm management plan developed under the Natural Resource Conservation Service's conservation planning process, that includes elements addressing management and use of digestate; or (ii) Meet compost quality standards of WAC 173-350-220 for pathogens, stability, nutrient testing, metals and other testing before it is distributed for off-site use, or be sent to an off-site permitted compost facility for further treatment to meet compost quality standards; or (iii) Be processed or managed in an alternate manner approved by the department. The owner or operator must submit an annual report to the department and the jurisdictional health department reporting the volume of nonmanure material in the anaerobic digester, and test results of digested fiber as described in Table 250-A (1)(h)(ii). Annual reports must be submitted on forms provided by the department and are due April 1st of each calendar year;

	Feedstocks	Volumes	Conditions
			(i) Digestate that is managed in accordance with the dairy nutrient management plan under chapter 90.64 RCW, or a farm management plan developed under the Natural Resource Conservation Service's conservation planning process, is no longer a solid waste when those plans include elements addressing management and use of digestate.
(2)	! Post-consumer food waste ! Preconsumer vegetative food waste ! Preconsumer animal-based waste ! Yard debris	3,000 gallons of liquid or semi-solid organic feedstocks on-site at any one time, when individual tanks have a capacity of # 1,000 gallons, or 20 cubic yards of nonliquid organic feedstocks on-site at any one time.	(a) The anaerobic digester design must comply with at least one of the following three conditions: (i) Design and operating standards in the Natural Resources Conservation Service's Washington Conservation Practice Standard, Anaerobic Digester Code 366 in effect October 2010, or as specified by the department; or (ii) Surface impoundment and tank standards, WAC 173-350-330; or (iii) Other engineered design that the owner or operator can demonstrate complies with the conditions of WAC 173-350-040, and is approved by the department.

	Feedstocks	Volumes	Conditions
			(b) For facilities managing more than 1000 gallons or 10 cubic yards on-site at any one time, and if organic materials are received from off-site, the owner or operator must submit an annual report to the department and the jurisdictional health department. Annual reports must be on forms provided by the department and are due April 1st of each calendar year. The annual report must detail the facility's activities during the previous calendar year and must include: (i) Annual quantity in cubic yards or gallons, and type of feedstocks received; (ii) Annual quantity in cubic yards or gallons of digestate distributed if applicable; (iii) Annual summary of digestate analysis if digestate is distributed off-site; and (iv) Any additional information required by the department or the jurisdictional health department. (c) For digestate (solids, semi-solids or liquids) being distributed off-site, the following conditions apply: (i) Sample and test digestate solids every 5,000 cubic yards or twice yearly, whichever is more frequent, to demonstrate it meets compost quality standards of WAC 173-350-220(4) (Table 220-B) before it is distributed for off-site use; or (ii) Ensure digestate liquids or nonseparated digestate meets the conditions for a commercial fertilizer as applicable in chapter 15.54 RCW; or

Comment [E4]: This should be included in the definitions section (WAC 173-350-100).

	Feedstocks	Volumes	Conditions
			(iii) Send digestate to a compliant permitted or conditionally exempt compost facility for further treatment to meet compost quality standards; or (iv) Land apply digestate in accordance with WAC 173-350-230, Land application; or (v) Use digestate in accordance with WAC 173-350-200, Beneficial use permit exemptions; or (vi) Process or manage digestate in an alternate manner approved by the department or the jurisdictional health department.

(b) The owner or operator of an anaerobic digester in compliance with all of the conditions of Table 250-A must also meet all of the following conditions in order to maintain exempt status:

(i) Receive, handle, and store all organic materials in a manner that complies with WAC 173-350-040, Performance standards;

(ii) Allow inspections by the department and/or jurisdictional health department at reasonable times to verify compliance with the conditions specified in this subsection;

(iii) Manage the operation to prevent the attraction of flies, rodents, and other vectors; and

(iv) Manage the operation to prevent the migration of agricultural pests identified by local horticultural pest and disease control boards, as applicable.

(v) For facilities managing more than 1000 gallons or 10 cubic yards on-site at any one time, notify the department and jurisdictional health department thirty days prior to operation. Notification must be on forms supplied by the department.

(3) Anaerobic digester - Location standards (permit requirements). There are no specific location standards for anaerobic digesters subject to this chapter; however, anaerobic digesters must meet the requirements of other federal, state, or local laws and regulations that apply under WAC 173-350-040(5).

Note: When considering anaerobic digestion facility location, please review the U.S. Department of Transportation Federal Aviation Advisory Circular No. 150/5200-33B. 2007.

(4) Anaerobic digester - Design standards (permit requirements). Anaerobic digesters must be designed such that the facility can be operated to meet the performance standard requirements in WAC 173-350-040. The owner or operator of an anaerobic digester facility must:

(a) Prepare and provide to the jurisdictional health department engineering reports, plans, specifications, and a

construction quality assurance plan that address the standards of this subsection. The reports, plans, and specifications must be prepared by an engineer licensed in the state of Washington and must include:

(i) An engineering report that presents the design basis and calculations for the engineered features of the facility including, but not limited to, pads, impoundments, leachate management features (if applicable), digestate management features, storm water management features, and anaerobic digester features. The engineering report must demonstrate that the proposed design will meet the performance standards of this chapter;

(ii) Scale drawings of the facility including the location and size of feedstock storage areas, fixed equipment, buildings, leachate management features (if applicable), digestate management features, storm water management features, access road and other constructed areas, and buildings integral to facility operation;

(iii) Design specifications for the engineered features of the facility including, but not limited to, pads, storm water management features, leachate management features (if applicable), digestate management features, and an anaerobic digester design that demonstrates all structures, containers, tanks, and/or surface impoundments will meet the requirements of this section, and of any federal, state, or local water and air quality permits; and

(iv) A construction quality assurance plan that describes monitoring, testing and documentation procedures that must be performed during construction of the facility to ensure the facility is constructed in accordance with the approved design.

(b) Provide all weather roads from the public highway to and within the facility when operations require public access. Roads must be designed and maintained to prevent traffic congestion, traffic hazards, dust and noise pollution.

(c) Design waste receiving areas, digesters, digestate management features, storm water, and leachate management features (if applicable), to prevent contamination of air, soil, surface water, and groundwater.

(i) Feedstock, leachate (if applicable), and digestate receiving and storage areas must either be in tanks or surface impoundments meeting the requirements of this section, or be on pads to prevent contamination of air, soil, surface water, and groundwater underlying or adjacent to receiving and storage areas;

(ii) Pads must meet the following requirements:

(A) All pads must be curbed or graded in a manner to prevent ponding, control run-on and runoff, and separately collect and convey all storm water and leachate to separate storage or holding systems. Storm water that is combined with leachate must be treated as leachate in accordance with this section;

(B) All pads must be constructed on subgrades that provide sufficient bearing capacity to support the weight of the pad, the materials placed on them, and the equipment used in handling the materials;

(C) The entire surface area of the pad must be designed to maintain its structural and hydraulic integrity against loads resulting from feedstock and digestate storage, machinery used for

feedstock handling, and against surface wear or damage caused by feedstock and digestate handling and storage;

(D) The pad may be constructed of materials such as concrete (with sealed joints) or asphaltic concrete that prevents subsurface soil and groundwater contamination; and

(E) The jurisdictional health department may allow pads to be designed and constructed with materials other than those listed in (c)(ii)(D) of this subsection, provided the applicant demonstrates in the engineering report to the jurisdictional health department's satisfaction that the alternative pad provides sufficient protection to meet the performance standards of this section and of WAC 173-350-040.

(iii) The anaerobic digester design must comply with one of the following three conditions:

(A) Design criteria in the Natural Resources Conservation Service's Washington Conservation Practice Standard, Anaerobic Digester Code 366 in effect October 2010, or other effective date as specified by the department; or

(B) Surface impoundment and tank design standards, WAC 173-350-330(3); or

(C) Other engineered design that the owner or operator can demonstrate complies with the conditions of WAC 173-350-040 to the jurisdictional health department's and the department's satisfaction. Written consent from the jurisdictional health department and the department constitutes approval.

(iv) Storm water management features must divert storm water from feedstock receiving and storage areas, and from digestate collection and storage areas. Features may include, but are not limited to, run-on prevention systems, berms, diversion swales, ditches, and other features;

(v) Leachate management features may include, but are not limited to, runoff prevention systems, leachate collection, conveyance, storage structures, and treatment systems;

(vi) Leachate (if applicable) must be contained or collected. Any discharges to ground that result in contaminants migrating to groundwater require a waste discharge permit under chapter 90.48 RCW, Water pollution control, prior to discharge. Discharges to ground that result in degradation of groundwater quality are prohibited under chapter 90.48 RCW, Water pollution control. Any discharge to sanitary sewer requires additional permitting by the local delegated authority or department;

(vii) Leachate ponds or tanks, or digestate liquid storage in ponds or tanks must meet one of the following conditions:

(A) Ponds must meet Natural Resources Conservation Service Standard for a waste storage facility in the 2001 Washington Field Office Technical Guide 313 (revised June 2011); or

(B) Ponds must have a liner consisting of a minimum 30-mil thickness geomembrane on a subgrade that provides sufficient bearing capacity to support the liner and the contents of the pond. A liner constructed with a high density polyethylene geomembrane must be at least 60-mil thick to allow for proper welding; and

(I) Have dikes and slopes designed to maintain their structural integrity under conditions of a leaking liner and

capable of withstanding erosion from wave action, overfilling, or precipitation; and

(II) Have freeboard (distance between the liquid level and the top of the pond) equal to or greater than eighteen inches to avoid overtopping from wave action, overfilling, or precipitation. The jurisdictional health department may reduce the freeboard requirement provided that other engineering controls are in place that prevent overtopping. These engineering controls must be specified during the permitting process; or

(C) The jurisdictional health department may approve the use of an alternative liner design if the owner or operator can demonstrate during the permitting process that the proposed design will prevent migration of solid waste constituents or leachate into the ground or surface waters at least as effectively as the liners described in this subsection; or

(D) Tanks used to store leachate or digestate liquid must meet design standards in WAC 173-350-330 (3)(b).

(viii) Leachate ponds and digestate liquid storage that have the potential to impound more than 10-acre feet (three million two hundred fifty-nine thousand gallons) of liquid measured from the top of the dike and that would be released by a failure of the containment dike must be reviewed and approved by the department's dam safety section.

(5) Anaerobic digester - Operating standards (permit requirements). The owner or operator of an anaerobic digester must operate in compliance with the performance standards of WAC 173-350-040 or Natural Resource Conservation Service Practice Standard Code 366 as applicable, and:

(a) Operate the facility to:

(i) Control air contaminants, such as dust and nuisance odors, to prevent these and other contaminants from migrating beyond property boundaries;

(ii) Prevent the attraction of vectors;

(iii) Prevent the migration of agricultural pests identified by the local horticultural pest and disease control boards as applicable;

(iv) Confine organic materials prior to and after processing to specifically designated areas, meeting the applicable standards of this section;

(v) Ensure that dangerous waste is not accepted, treated, or stored;

(vi) Ensure the facility operates under the supervision and control of a properly trained individual during hours of operation when facility staffing is required;

(vii) Ensure facility employees are trained in appropriate facility operations, maintenance procedures, and safety and emergency procedures according to individual job duties and according to an approved plan of operation; and

(viii) Restrict access to the facility when the facility is closed.

(b) Inspect the facility to prevent malfunctions and deterioration, operator errors, and discharges that may lead to the release of wastes to the environment or cause a threat to human

health. The owner or operator must conduct these inspections as needed, but at least weekly, unless an alternate schedule is approved by the jurisdictional health department as part of the permitting process.

(c) Maintain operating records of the following:

(i) Process monitoring data as described in the plan of operation;

(ii) The quantity in gallons or cubic yards, and types of feedstocks received;

(iii) Results of analysis for digestate that is sold or distributed, according to subsection (5)(e) of this section; and

(iv) Facility inspection reports. Significant deviations from the plan of operation must be noted in the operating record. Records must be kept for a minimum of five years and must be available upon request by the jurisdictional health department.

(d) Prepare and submit a copy of an annual report to the jurisdictional health department and the department by April 1st of each calendar year for activities during the previous calendar year. Annual reports must be submitted on forms provided by the department and must include:

(i) Annual quantity and type of feedstocks received;

(ii) Annual quantity of digestate distributed if applicable;

(iii) Annual summary of digestate analysis as applicable, if digestate is distributed off-site; and

(iv) Any additional information required by the department or the jurisdictional health department.

(e) If distributing digestate (solids, semi-solids, or liquids) off-site, produce and manage the product so that it does not harm human health or the environment; and:

(i) Test representative samples of digestate solids every 5,000 cubic yards to demonstrate it meets compost quality standards in WAC 173-350-220(4) (Table 220-B). An alternate testing frequency may be required or approved by the jurisdictional health department; or

(ii) Ensure digestate meets the conditions for a commercial fertilizer as applicable in chapter 15.54 RCW; or

(iii) Send digestate to a permitted compost facility for further processing; or

(iv) Land apply digestate in accordance with WAC 173-350-230, Land application; or

(v) Use digestate in accordance with WAC 173-350-200, Beneficial use permit exemption; or

(vi) Apply digestate on agricultural lands at agronomic rates in accordance with a dairy nutrient management plan or a nutrient management plan; or

(vii) Manage digestate in an alternate manner as approved by the jurisdictional health department and the department.

(f) Develop, keep, and abide by a plan of operation approved as part of the permitting process. The plan must describe the facility's operation and must convey to site operating personnel the concept of operation intended by the facility designer. The plan of operation must be kept on-site and available for inspection at the request of the jurisdictional health department. When

necessary, the plan must be modified with the approval, or at the direction of the jurisdictional health department. Each plan of operation must include the following:

(i) A description of the types of feedstocks to be handled at the facility. Feedstocks must be approved by the department or jurisdictional health department;

(ii) Procedures for ensuring that only feedstocks described will be accepted;

(iii) Procedures for handling unacceptable wastes;

(iv) A plan for processing digestate to meet the requirements of (e) of this subsection, if distributing digestate off-site;

(v) A nutrient management plan for agricultural lands and farm lands (as described in RCW 84.34.020) if using digestate on-site;

(vi) A description of how facility staff will be appropriately trained;

(vii) A calculation of monthly capacity based on maximum volume (cubic yards or gallons) of all materials on-site at any one time. All materials on-site include feedstocks, digesting materials and digestate;

(viii) A material flow plan describing general procedures to manage all materials on-site. All materials on-site include incoming feedstock, digesting materials, and digestate;

(ix) An odor management plan including, but not limited to, the following components:

(A) Methods for treating emissions to reduce odors, if any;

(B) A community relations plan to address odor issues should they arise; and

(C) A description of facility and operational improvements that could be made, if nuisance odors are identified beyond the facility's property boundary, as determined by the jurisdictional health department, the department, or the permitting air authority. The description of operational improvements must address feedstock receiving, processing, and digestate storage areas of the facility.

(x) A description of how equipment, structures, and other systems will be inspected and maintained, including frequency of inspection and inspection logs. This description must include, but is not limited to:

(A) The groundwater monitoring system, if required;

(B) The overfilling prevention equipment, including details of filling and emptying techniques;

(C) The liners of surface impoundments and tanks, tank piping, and secondary containment, as applicable.

(xi) Safety, fire, and emergency plans including a spill prevention/response plan;

(xii) The forms used to record volumes (in cubic yards or gallons) of accepted feedstocks; and

(xiii) Other such details to demonstrate that the facility is operated in accordance with this chapter and as required by the jurisdictional health department.

(6) Anaerobic digester - Groundwater monitoring requirements (permit requirements). There are no specific groundwater monitoring requirements for anaerobic digestion facilities subject to this chapter; however, anaerobic digestion facilities must meet

the requirements of other federal, state, or local laws and regulations that apply under WAC 173-350-040(5).

(7) Anaerobic digester - Closure requirements. The owner or operator of an anaerobic digester facility must:

(a) Develop, keep, and follow a closure plan approved by the jurisdictional health department as part of the permitting process. At a minimum, the closure plan must include removing all organic materials, including digestate, from the facility. For planning purposes, assume the facility is at full permitted capacity when it is closed;

(b) Notify the jurisdictional health department sixty days in advance of closure. At closure, the facility is financially responsible for the removal of all organic materials including, but not limited to, raw or partially digested feedstocks, and digestate from the facility. The materials must be sent to another facility that complies with the applicable regulations for handling the waste.

(8) Anaerobic digester - Financial assurance requirements (permit requirements). There are no specific financial assurance requirements for anaerobic digestion facilities subject to this chapter; however, anaerobic digestion facilities must meet the requirements of other federal, state, or local laws and regulations that apply under WAC 173-350-040(5).

(9) Anaerobic digester - Permit application contents (permit requirements). The owner or operator of an anaerobic digestion facility not exempt under subsection (2) of this section must obtain a solid waste permit from the jurisdictional health department. All applications for permits must be in accordance with the procedures established in WAC 173-350-710. In addition to the requirements of WAC 173-350-710 and 173-350-715, each permit application must contain:

(a) Engineering reports, plans, and specifications that address the design standards of subsection (4) of this section;

(b) A plan of operation that addresses the requirements of subsection (5) of this section; and

(c) A closure plan meeting the requirements of subsection (7) of this section.

(10) Anaerobic digester - Construction records (permit requirements). Facilities must not start operation until the jurisdictional health department has determined that the construction was completed in accordance with the approved engineering report, plans, and specifications and has approved the construction documentation in writing and issued a permit. Within thirty days of completing construction, the owner or operator of an anaerobic digestion facility must provide the following materials to the jurisdictional health department and the department:

(a) Copies of the construction record drawings for engineered facilities at the site; and

(b) A report documenting facility construction, including the results of observations and testing carried out as part of the construction quality assurance plan.

PUBLIC HEALTH
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Environmental Health: 509/886-6450 • FAX 886-6449
Maternal Child Health: 509/886-6400 • FAX 886-6436

October 2, 2012

Kyle Dorsey
Washington State Department of Ecology
Waste 2 Resources Program,
PO Box 47600,
Olympia, WA 98504-7600

RECEIVED
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ECOLOGY W2R

Re: Proposed Changes to WAC 173-350 Composting Citations

Dear Mr. Dorsey:

The following is my comment to these changes. Further and more expert comments will follow from Suzen Hyde, our compost facility expert.

1) The revision states, *"WAC 173-350-030 Effective Dates. (1) Effective Dates. These standards apply to all facilities, except existing facilities, when updated or new sections in this chapter become effective."*

I believe this could be written such that the meaning were more clear.

Suggestions, if this is the intended meaning; *"WAC 173-350-030 Effective Dates. (1) Effective Dates. These standards apply to all facilities when updated or new sections in this chapter become effective, except for pre-existing properly permitted facilities."*

Or

"These standards apply to all facilities permitted after the effective date of these updated or new sections in this chapter."

If you have any questions please feel free to call me at (509)886-6460.

Sincerely,

David D. Prosch
Environmental Health
Solid Waste Program
Chelan-Douglas Health District

Royal Organic Products
INNOVATIVE SOIL SOLUTIONS

Kyle Dorsey
Department of Ecology
P.O. Box 47600
Olympia, WA 98504

October 28, 2012

Re: Proposed Amendments-Chapter 173-350

We appreciate the Department of Ecology's initial attempt to work with Washington State's organic recycling industry to consolidate and update the regulations under which we operate. It is our hope that effort will continue as comments are received from stakeholders during this public comment period.
The Department of Ecology's role in protecting human health and the environment are much appreciated.
We have reviewed the proposed rule changes, the Preliminary Cost-Benefit and Least Burdensome Alternative Analyses, and the Small Business Economic Impact Statement. The detrimental effects to the industry due to the proposed changes are not adequately addressed. Five years ago, in 2007, there were 41 permitted composting facilities in the state and there are now 33 reported. We are aware of small governmental (city and county) operated facilities, that received grant money from the Department of Ecology, are auctioning off their inventories and further degrading the markets. At a time of poor economic conditions, and a weakened industry, now is not the time to insert new regulatory mandates into areas that should be left to market forces.
New regulations as to contaminants, specifically the drastic reduction in film plastic allowance, will cause considerable cost increases. In the Department of Ecology's publication "Preliminary Cost-Benefit and Least Burdensome Alternative Analyses" on page 23, in the last sentence of 3.3.5.7 it is stated that "Ecology could not at this time confidently quantify the cost of finer screening of compost material." No attempt was made to include the largest single cost, due to the changes, into the report but we will attempt to address that at this point.
According to the statistics provided by the Department of Ecology the total organics diverted in 2010 was 1,491,404.61 tons. For the sake of clarity let's eliminate the need to further screen agricultural residues, wood wastes, and land clearing debris since they most likely would not have significant amounts of plastic. That leaves us with 885,447 tons of yard and food waste diverted to composting facilities. In the past 10 years we have seen a growth rate of 6.9% annually for these materials, but only a 3% annual growth in the past 5 years. We will use the lower number for a growth rate. We will also assume that half the volume of the input material will be subject to additional screening. The cost of screening will vary from facility to facility from a low of about $1 per ton to

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a high of about $3 per ton, depending on equipment, ownership, overhead, and logistics. We will use a conservatively low estimated average of $1.5 per ton. Using these conservative assumptions we calculate a cost, due to these regulatory changes, to the industry over the next twenty years of $19,498,875. Using the methodology of the Department of Ecology in the "Small Business Economic Impact Statement" on page 3, this would be the equivalent of a loss of 337 jobs.
We also need to re-examine the costs of the new plans. The most costly plan identified by Ecology is the Progressive Odor Management Plan. This plan would have us guess at a future problem and guess at a future solution while incorporating nearly all aspects of production. Those kinds of decisions could lock us into a system that may not be logical in case of an actual incident, and would not be left to someone paid "prevailing wage". It would most likely require an outside engineering consultant, if existing management or engineering capabilities were not adequate. The cost of employee would be more like $30 an hour plus an additional (as it would be for any employee cost) of about 43% for taxes, benefits, and payroll overhead. These figures should be conservatively low as the Dept. of Ecology charges facilities $95/hr to review documents. This increases the cost estimate from the high published by 122% to $56,563.38. Adjusting the other numbers in Table 3 of the "Preliminary Cost-Benefit and Least Burdensome Alternative Analyses" to account for employee costs in 2012 dollars, the total costs of the rule changes is now $498,807 not including the extra screening. The total cost of the proposed rule changes, to the industry over the next 20 years, would be a minimum of $19,988,682. That number does not include other facility upgrades needed to comply with other issues regarding what is compost and what is solid waste.

Consolidating, updating, and clarifying the rules is a good idea and was needed. However, some of the rule changes seem to go beyond the purview of Ecology and those issues would be better left to market forces. The drastic change of the limits for film plastic does not just change the cost structure but it would, as worded, condemn large amounts of otherwise finished compost back to the landfills. It would also cause the operator to treat that material as a solid waste and increase expense regarding leachate and storm water run-off and other issues. While the industry is continually striving to increase the quality of its products, the specifications should be left to the customer and application as long as it does not adversely affect human health or the environment.
If we could we eliminate all plastics (conventional and compostable) from the composting stream that would be wonderful for all the stakeholders, but it is not practical to expect us to reject loads from a large municipality or county that holds so much power over us. If a load is received that is over 5% contaminated, who is in violation? Compostable plastics (now Manufactured Organics) are not considered a contaminant upon arrival but they are a contaminant in the compost. No composting facility in this state is set up to consistently break down compostable plastics at the required 140-180 days at temperature needed. Yet these compostable plastics are being pushed by some government agencies as environmentally friendly. They will end up in the landfill.

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Something as simple as a rock is not as simple as it seems. Sand is rock, as is gypsum or boulders. Listing "rocks" as a contaminant without definition complicates the issues. Having finished compost with a few too many rocks turns it into a solid waste with no remedy mentioned in the regulations. This issue, along with other questions posed at the public hearings, was not clarified during the Q&A.
After reading through the proposal, examining the cost analysis provided by the Department of Ecology, and discussing the issues within industry associations, we conclude that these regulatory changes should not be implemented as written. There is still confusion as to the definitions and impacts they would have to an industry that is already weakened. At a time of decreasing facilities, increasing feedstock volumes, and a slump in sales, regulating a decrease of on-hand materials does not fix the problem.

We ask the Department of Ecology to keep the review period open for a longer period of time, re-engage with the trade associations (as well as other stakeholders), and not rush the implementation of new rules as we strive to do what is best for the State of Washington.

Respectfully submitted,

Thad Schutt

President, Royal Organic Products, LLC

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WASTE MANAGEMENT

Pacific Northwest-British Columbia
720 4th Ave, Suite 400
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November 2, 2012

Via Email: kyle.dorsey@ecy.wa.gov

Mr. Kyle Dorsey
Washington Department of Ecology
Waste 2 Resources Program
P.O. Box 47600
Olympia, WA 98504-7600

Subject: Formal Comments to the Proposed Composting Facility and Anaerobic Digestion Rule Amendments, WAC 173-350.

Dear Mr. Dorsey:

Waste Management (WM) is pleased to provide comments, during the formal comment period to the Washington Department of Ecology (Department) on their recently released composting facility and anaerobic digestion rule amendments. We believe the draft rule proposal is timely, appropriate, and comprehensive given the collective effort across Washington to cultivate organics collection; yet, the Department foreseeing continued organics expansion also recognizes that composting and anaerobic digester facilities need to be effectively operated, composted material managed, and compliance issues mitigated. Thus, we applaud the Department's efforts to minimize the environmental impact of organics management while driving the industry to fully extract the highest value from our state's organic resources and facilities. The mixture of performance-based standards with prescriptive standards as presented is ideal. Performance-based rules are more dynamic, allowing the experienced and knowledgeable compost industry to design methodologies to effectively meet the standards while spurring innovation and new technologies. However, prescriptive standards in areas such as testing requirements and facility closure are also needed to ensure a composting operation protects both human health and the environment.

Our comments are below with the amended rule subsection noted in bold immediately following the comment:

Comment 1: The definition of physical contaminants should not contain naturally occurring substance such as rocks. In accordance with the U.S. Composting Council's Test Methods for the Examination of Composting and Compost (TMECC), the Department should strictly limit their definition of physical contaminants to man-made contaminants and remove *rocks*

from the list of physical contaminants. Alternatively, the Department could adopt and use the USCC's suggested terminology of *man-made inerts* which limits contaminants to those that do not result from natural processes. **WAC 173-350-100.**

Comment 2: The Department should adopt and require the use of the USCC's test methods for film plastics and man-made inerts, Test Methods 3.05 and 3.08, respectively, as found in their publication, Test Methods for the Examination of Composting and Compost (TMECC). Utilizing the current amended definition of physical contaminants in the Department's proposed rules, there is no equivalent test method in the USCC's TMECC. As previously stated, the physical attributes examined in compost include man-made inerts, which would include only naturally occurring properties and would not include rocks. The Department should use a classification of physical contaminants which is consistent with Test Method 3.08 for man-made inerts and should also adopt this corresponding test method.

Furthermore, USCC also provides Test Method 3.05 for film plastics which is based on surface area rather than by weight. USCC has developed these standardized testing protocols, like Test Method 3.05, using established industry specifications and experience. Moreover, WM is not aware of other state regulations which use weight as a standard in determining the amount of film plastic in compost. Thus, we recommend that the Department adopt the peer-reviewed and uniform USCC Test Method 3.05 for film plastic. **WAC 173-350-220(4)(a)(x); Table 220-B.**

Comment 3: The Department should work with the composting producers to confirm if the limit of less than 0.10 percent film plastic by weight as proposed is achievable. WM's understanding in speaking with our composting partners is that there has been no research into whether the film plastic limitation is overly restrictive or on its definitive impact on finished compost. Thus, we encourage the Department to actively collaborate with the composting industry to determine if this additional requirement for final composted material is indeed both reasonable and attainable before this parameter is finalized. **WAC 173-350-220(4)(a)(x); Table 220-B.**

Comment 4: Given that there is an inherent environmental risk in a release from a lined leachate pond, the Department (and the jurisdictional health department) should consider Washington's varied geography and whether the prescribed liner will adequately protect the environment. Therefore, we would recommend a requirement that both regional geology and meteorology be weighed and evaluated when a facility selects a liner and that this provision be inserted into the rule proposal. Additionally, these same factors should be considered and included in the determination, by the jurisdictional health department, of the frequency of liner inspections to ensure that five-year inspections, and not a more recurrent rate, are sufficiently protective of the environment. **WAC 173-350-220(3)(e)(iv)(B); WAC 173-350-220(4)(c).**

Comment 5: We recommend that the requirements for closure be clarified and detailed in the Department's proposed rule amendments. Specific reference should be provided in a facility's closure plan to the total quantities of received feedstock and finished composted material that could be expected on site at any one time, based on the annual volume of

material managed at the site. The closure plan should also require and include cost estimates for the transportation and disposal of this specified amount of material. Additionally, some type of financial assurance instrument (for example, a surety bond or letter of credit) should be required in the amount of the calculated cost estimate. Finally, the closure costs should be reviewed and updated, if necessary, annually. Please refer to composting facility standards in Wisconsin, New York, and Pennsylvania for detailed requirements regarding closure costs and financial responsibility. **WAC 173-350-220(6); WAC 173-350-220(7).**

Comment 6: In the rule subsections noted, the term *pads* should be further defined to include receiving, processing, and processing areas. Alternatively, pads could be described in the definitions section of the rule. **WAC 173-350-220(3)(b)(i); WAC 173-350-250 (4)(a)(i)**

Comment 7: In the cited rule subsection, WM suggests additional language after the sentence: *Aerated static pile must have a cover to ensure that pathogen reduction temperatures are reached and vectors are controlled.* We would recommend adding: "Cover can be a synthetic material or a layer of already processed material such as screened overs." **WAC 173-350-220(4)(a)(vii)(B).**

We appreciate the Department's consideration of our comments. Should the Department have any questions regarding our comments or would like to discuss any comments further, please contact me at (425) 814-7841 or via email at kshanle1@wm.com.

Sincerely,

Kimberly J. Shanley
Government Affairs Manager

Dorsey, Kyle (ECY)

From: Shanley, Kimberly [kshanle1@wm.com]
Sent: Thursday, January 10, 2013 7:22 AM
To: Dorsey, Kyle (ECY)
Subject: RE: Formal Comments to the Proposed Composting Facility Rule Amendments, WAC 173-350
Attachments: WM Comments to Proposed Composting Standards 11 02 2012 Final.docx; WM Comments to DOE Proposed Composting Standards 11 02 12 Final.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning Kyle,

I just recently reviewed the attachment that I originally sent you and realized it was an earlier draft inadvertently emailed, with several typing errors in it. The edited and correct version is attached. Mistakes were amended throughout but mainly comment number two is clearer in its explanation and comment number 6 explains that a pad should be defined to include *receiving, processing, and storage* areas. If you could use this copy instead once you publish the comments and responses to the final rule, I would greatly appreciate it (and will not be so embarrassed over my first error-filled document)! Thanks!

Sincerely,
Kimberly Shanley
Government Affairs - Pacific Northwest/British Columbia
720 4th Avenue, Suite 400, Kirkland, WA 98033-8136
(425) 814-7841 - office; (425) 293-9352 - cellular
WM **Waste Management**

From: Dorsey, Kyle (ECY) [kdor461@ECY.WA.GOV]
Sent: Friday, November 02, 2012 4:15 PM
To: Shanley, Kimberly
Subject: RE: Formal Comments to the Proposed Composting Facility Rule Amendments, WAC 173-350

Just wanted to let you know we got your comments. Thanks for taking time to participate.

From: Shanley, Kimberly [mailto:kshanle1@wm.com]
Sent: Friday, November 02, 2012 4:03 PM
To: Dorsey, Kyle (ECY)
Subject: Formal Comments to the Proposed Composting Facility Rule Amendments, WAC 173-350

Please find attached to this email, Waste Management's comments to the proposed rule amendments of Chapter 173-350 WAC. We appreciate the opportunity to comment on the rule proposal during this formal comment period.

Sincerely,

Kimberly Shanley
Government Affairs - Pacific Northwest/British Columbia
720 4th Avenue, Suite 400, Kirkland, WA 98033-8136
(425) 814-7841 - office; (425) 293-9352 - cellular
WM **Waste Management**

Waste Management recycles enough paper every year to save 41 million trees. Please recycle any printed emails.

WASTE MANAGEMENT

Pacific Northwest-British Columbia
720 4th Ave, Suite 400
Kirkland, WA 98033

November 2, 2012

Via Email: kyle.dorsey@ecy.wa.gov

Mr. Kyle Dorsey
Washington Department of Ecology
Waste 2 Resources Program
P.O. Box 47600
Olympia, WA 98504-7600

Subject: Formal Comments to the Proposed Composting Facility and Anaerobic Digestion Rule Amendments, WAC 173-350

Dear Mr. Dorsey:

Waste Management (WM) is pleased to provide comments, during the formal comment period, to the Washington Department of Ecology (Department) on their recently released composting facility and anaerobic digestion rule amendments. We believe the rule proposal is timely, appropriate, and comprehensive given the collective effort across Washington to cultivate organics collection; yet, the Department foreseeing continued organics expansion also recognizes that composting and anaerobic digester facilities need to be effectively operated, composted material managed, and compliance issues mitigated. Thus, we applaud the Department's efforts to minimize the environmental impact of organics management while driving the industry to fully extract the highest value from our state's organic resources and facilities. A mixture of performance-based standards with prescriptive standards is ideal. Performance-based rules are more dynamic, allowing the experienced and knowledgeable compost industry to design methodologies to effectively meet the standards while spurring innovation and new technologies. However, prescriptive standards in areas such as testing requirements and facility closure are also needed to ensure a composting operation protects both human health and the environment.

Our comments are below with the reference rule subsection noted in bold immediately following the comment:

Comment 1: The definition of physical contaminants should not contain naturally occurring substances such as rocks. In accordance with the U.S. Composting Council's (USCC) Test Methods for the Examination of Composting and Compost (TMECC), the Department should strictly limit their definition of physical contaminants to man-made contaminants and remove

rocks from the list of physical contaminants. Alternatively, the Department could adopt and use the USCC's suggested terminology of *man-made inerts* which limits contaminants to those that do not result from natural processes. **WAC 173-350-100.**

Comment 2: The Department should adopt and require the use of the USCC's test methods for film plastics and man-made inerts, Test Methods 3.05 and 3.08 respectively, as found in their publication, Test Methods for the Examination of Composting and Compost (TMECC). Utilizing the current amended definition of physical contaminants in the Department's proposed rules, there is no equivalent test method in the USCC's TMECC. As previously stated, the physical attributes examined in compost using USCC's test method include only man-made inerts, which do not include naturally occurring substances such as rocks. The Department should use a classification of physical contaminants which is consistent with Test Method 3.08 for man-made inerts and should also adopt this corresponding test method.

Furthermore, USCC also provides Test Method 3.05 for film plastics, which is based on surface area rather than a measurement of weight. USCC has developed these standardized testing protocols, like Test Method 3.05, using established industry specifications and experience. Moreover, WM is not aware of other state regulations which use weight as a standard in determining the amount of film plastic in compost. Thus, we recommend that the Department adopt the peer-reviewed and uniform USCC Test Method 3.05 for film plastic. **WAC 173-350-220(4)(a)(x); Table 220-B.**

Comment 3: The Department should work with the composting producers to confirm if the limit of less than 0.10 percent of film plastic by weight as proposed is achievable. WM's understanding in speaking with our composting partners is that there has been no research into whether the film plastic limitation is overly restrictive or on its definitive impact on finished compost. Thus, we encourage the Department to actively collaborate with the composting industry to determine if this additional requirement for final composted material is indeed both reasonable and attainable before this parameter is finalized. **WAC 173-350-220(4)(a)(x); Table 220-B.**

Comment 4: Given that there is an inherent environmental risk in a release from a lined leachate pond, the Department (and the jurisdictional health department) should consider Washington's varied geography and whether the prescribed liner will adequately protect the environment. Therefore, we would recommend a requirement that both regional geology and meteorology be weighed and evaluated when a facility selects a liner and that this provision be inserted into the rule proposal. Additionally, these same factors should be considered and included in the determination, by the jurisdictional health department, of the frequency of liner inspections to ensure that five-year inspections, and not a more recurrent rate, are sufficiently protective of the environment. **WAC 173-350-220(3)(e)(iv)(B); WAC 173-350-220(4)(c).**

Comment 5: We recommend that the requirements for closure be clarified and detailed in the Department's proposed rule amendments. Specific reference should be provided in a facility's closure plan to the total quantities of received feedstock and finished composted material that could be expected on site at any one time, based on the annual volume of

material managed at the site. The closure plan should also require and include cost estimates for the transportation and disposal of this specified amount of material. Additionally, some type of financial assurance instrument (for example, a surety bond or letter of credit) should be required in the amount of the calculated cost estimate. Finally, the closure costs should be reviewed and updated, if necessary, annually. Please refer to composting facility standards in Wisconsin, New York, and Pennsylvania for detailed requirements regarding closure costs and financial responsibility. **WAC 173-350-220(6); WAC 173-350-220(7).**

Comment 6: In the rule subsections noted, the term *pads* should be further defined to include receiving, processing, and storage areas. Alternatively, pads could be described in the definitions section of the rule. **WAC 173-350-220(3)(b)(i); WAC 173-350-250 (4)(a)(i).**

Comment 7: In the cited rule subsection, WM suggests additional language after the sentence: *Aerated static pile must have a cover to ensure that pathogen reduction temperatures are reached and vectors are controlled.* We would recommend adding: "Cover can be a synthetic material or a layer of already processed material such as screened overs." **WAC 173-350-220(4)(a)(vii)(B).**

We appreciate the Department's consideration of our comments. Should the Department have any questions regarding our comments or would like to discuss any comments further, please contact me at (425) 814-7841 or via email at kshanle1@wm.com.

Sincerely,

Kimberly J. Shanley

Kimberly J. Shanley
Government Affairs Manager

Dorsey, Kyle (ECY)

From: Ted Silvestri [ted.silvestri@co.yakima.wa.us]
Sent: Monday, October 15, 2012 3:16 PM
To: Dorsey, Kyle (ECY)
Subject: WAC 173-350 comments
Attachments: Compost Smell Paper.pdf; COMPARISON OF ODOROUS VOLATILE COMPOUNDS FROM.pdf

Yakima Health District staff have reviewed the proposed changes to WAC 173-350 and have the following comments:

On Page 14, Throughput is defined as:

"Throughput" means the amount of feedstocks in tons or cubic yards that a solid waste facility processes in a given amount of time, such as a calendar year. Throughput is identified by the conditions of exemption, the permit, or the plan of operations as approved by the jurisdictional health department or the department.

At what point, in regards to a composting site, does the material become throughput as opposed to being in process? Have curing piles made it through the operation or do they need to leave the site first? Is finished compost, stockpiled for sale, considered throughput or does it need to leave the site first?

On pages 15 and 16, Yard debris is defined:

"Yard debris" means plant material commonly created in the course of maintaining yards and gardens and through horticulture, gardening, landscaping or similar activities. Yard debris includes, but is not limited to, grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit, and vegetable garden debris. Yard debris does not include sod (a combination of grass, roots, soil, and rocks) or soil.

Why is sod not a part of the yard waste? It appears that it would compost adequately using most methods of composting.

Page 29, table 220-B Testing Parameters

Where did the metal limits in this table come from and what is the justification for their use? We could not find the source or the numbers or the science behind them.

On page 33:

(B) A progressive odor management plan that must include a description of facility and operational improvements that could be made if nuisance odors are identified beyond the facility's property boundary, as determined by the jurisdictional health department, the department, or the air authority. The description must address the receiving, composting, curing, and storage areas of the facility. Facilities will have eighteen months after the effective date of this chapter to complete the progressive odor management section of their plan of operation;

also

"Nuisance odor" means any odor which is found offensive or may unreasonably interfere with any person's health, comfort, or enjoyment beyond the property boundary of a facility.

Speaking about these two items taken together: The definition of a nuisance odor is too open to subjective judgment. There is no definitive definition of an odor. How can we quantify odors so that there is a science based method to determine when odors are a problem before we cost these facilities a lot of money? There has been some work done in this area - see attached documents.

Page 37 Table 225-A Terms and Conditions for Solid Waste Permit
Exemptions, sections 1 & 2

The requirement that "Facilities must be managed to promote vermicomposting" appears clumsy. A better wording might be "For vermicomposting facilities, operators must…".

Page 42, Table 250 A, column 2

This states "3,000 gallons of liquid or semisolid organic feedstocks on-site at any one time, when individual tanks have a capacity of # 1,000 gallons, or 20 cubic yards of nonliquid organic feedstocks onsite at any one time."

We find this is confusing. A less confusing wording might be:

a) 3,000 gallons of liquid or semisolid organic feedstocks on-site at any one time,

or

b) when individual tanks have a capacity of equal to or less than# 1,000 gallons, or 20 cubic yards of nonliquid organic feedstocks onsite at any one time.

Ted Silvestri, R.S.
Environmental Health Specialist
Yakima Health District
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Comparison of Odorous Volatile Compounds from Fourteen Different Commercial Composts Using Solid-Phase Microextraction

H. Kim, L. L. McConnell, P. Millner

Abstract. *In this study, odorous volatile compounds (OVCs) from market−ready, commercial composts supplied by 14 different producers were compared using a recently developed method involving solid−phase microextraction (SPME) of headspace volatiles followed by GC analysis. The products analyzed were derived from a cross−section of the wide array of compost feedstock ingredients used in the U.S. (e.g., biosolids, yard trimmings, animal manure, and industrial by−products). A variety of quality assessment tests were performed using test procedures specified in a national certification program offered through the U.S. Composting Council. Measurements of odorous chemicals (i.e., trimethylamine, carbon disulfide, dimethylsulfide, dimethyldisulfide, propionic acid, and butyric acid) supplemented other quality aspects in the evaluation of stability. Result showed that relatively higher concentrations of reduced sulfur−containing compounds were detected from marketable composts containing sewage sludge than from composts produced with other feedstocks. The greatest amounts of reduced sulfur−containing compounds were detected from a compost containing a mixture of industrial sludge and agricultural byproducts. Pathogen indicator microbes for most composts were within limits for Class A (U.S. EPA 40CFR Part503). Very large numbers of fecal coliforms, E. coli, and Enterococcus were present in the compost that produced the greatest concentrations of carbon disulfide and dimethylsulfide. Composts containing sewage sludge and yard wastes produced relatively higher concentrations of propionic and butyric acids than those containing other ingredients. The composition of OVCs in compost products can be objectively evaluated with the SPME method reported here. Results in combination with other compost quality factors may help compost producers improve product quality.*

Keywords. *Butyric acid, Carbon disulfide, Composting, Dimethyldisulfide, Dimethylsulfide, Maturity, Odor, Propionic acid, Stability, Trimethylamine.*

Composting of agricultural, domestic, and industrial residuals is increasingly employed to reduce weight and volume of these materials, to destroy pathogens, to stabilize nutrients, and to produce organic soil amendments for agriculture and horticulture (Lafond et al., 2002). In the U.S., the number of composting facilities processing sludge from municipal or industrial wastewater treatment facilities, yard debris, animal manure, and food residuals also continues to increase.

As the quantity of the residuals being composted increases, the quality of the final marketable compost is attracting more interest from the public. The quality of commercial composts is often evaluated by measuring the contents of heavy metals, moisture, pathogens, nutrient content (Gagnon et al., 1999), and other factors important to agronomists and horticulturalists (U.S. Composting Council, 2002). However, odors from composts produced with different ingredients have not been assessed systematically. Experience in the U.S. has shown that processing and product odors have a major impact on the success of a facility. When composting facilities consistently create nuisance odors, their neighbors complain and some facilities have even been forced to close (Feinbaum, 2000).

Day et al. (1998) evaluated some volatile compounds using syringe collection and utilizing GC analysis of emissions from a commercial, outdoor, yard waste compost for a period over 49 days. Several volatile sulfur−containing compounds, for example, methylmercaptan and dimethylsulfide (DMS), were known to be produced through microbial decomposition of sulfur−containing organic materials, including the amino acids cysteine and methionine.

Typically, odor evaluation involves collecting gas containing the volatiles into Tedlar bags and transporting them back to a laboratory for analysis by a panel of human subjects using one of the standard olfactometry methods (ASTM, 1991; van Harreveld, 1999; Schamp and van Lagenhove, 1988; AWMA, 2002; CEN, 2003). Such sensory approaches do not provide specific chemical information needed to interpret the effects of process parameters on the source path generation of particular OVCs. Furthermore, olfactometry produces large differences in values between laboratories, even with the same sample (Gostelow et al., 2001). This is mainly due to the difficulty in calibration of the olfactometer and sample handling (Duffee and Cha, 1980). Shultz and van

Article was submitted for review in January 2004; approved for publication by the Structures & Environment Division of ASAE in October 2004.

The authors are **Hyunook Kim,** Assistant Professor, Department of Environmental Engineering, The University of Seoul, Seoul, Korea; **Laura L. McConnell,** Research Chemist, USDA−ARS Environmental Quality Laboratory, Beltsville, Maryland; and **Patricia Millner,** Research Microbiologist, USDA−ARS Sustainable Agricultural Systems Laboratory, Beltsville, Maryland. **Corresponding author:** Hyunook Kim, Department of Environmental Engineering, The University of Seoul, 90 Jeonnong−dong Dongdaemun−gu, Seoul, Korea 130−743l; phone: +82−2−2210−5624; fax: +82−2−2244−2245; e−mail: h_kim@uos.ac.kr.

Harreveld (1996) observed 1 to 3 orders of magnitude difference in odor concentration of a sample between different laboratories. Even recent multi−laboratory evaluations of odors by olfactometry, which incorporated the best practices of the European Standard (CEN, 1995), have continued to experience some difficulties in identifying and quantifying odors, despite considerable improvements from past practice (Oppl, 2004).

Recently, a more convenient and accurate method was developed to quantify odorous compounds in a gas matrix using solid−phase microextraction (SPME) coupled with gas chromatography (GC) (Kim et al., 2002a). The method was used to quantify several odorants from each unit process at a large wastewater treatment plant (Kim et al., 2002b). Researchers for this study have also used the method to study the mechanism of trimethylamine (TMA) generation from biosolids (Kim et al., 2003) and to characterize odorants from heat−dried pellets (Murthy et al., 2003). With SPME, sample collection and analyte extraction/concentration can be carried out in one step (Pawliszyn, 1997), so there is no need for Tedlar bags or Summa canisters for gas sampling or for any extraction procedure. The analysis of OVCs can be performed directly from the fibers without further sample handling.

In this study, headspace odorants (i.e., OVCs) from commercial composts of 14 different producers were characterized with the newly developed SPME method. The products analyzed comprised a cross−section of the wide array of compost feedstock ingredients used throughout the U.S., e.g., sewage sludge, yard trimmings, animal manure, and industrial by−products. The purpose of this study was to determine the relationship between OVCs (as measured by a chemical, non−sensory approach), feedstocks, and stability of the composted products.

Material and Methods

Calibration of SPME Fibers

The preparation of gas standards that are used for SPME calibration is an important and challenging component of the method, since the odorous gases are very reactive and unstable. Gas standards were generated using certified Teflon membrane permeation devices (NIST traceable, VICI Metronics, Inc., Santa Clara, Cal.) for each compound (table 1). The permeation devices were placed together in a thermostated glass chamber of a Model 320 Dynacalibrator (VICI Metronics, Inc.). High−purity (99.99%) nitrogen gas flowed through the permeation chamber at 72 mL/min, and the concentration was varied using additional dilution gas. Two SPME fibers were exposed to the gas standard in a temperature−controlled (20°C) Teflon cylindrical collection chamber (i.d. = 4.1 cm, Savillex Co., Minnetonka, Minn.) (fig. 1). Temperature inside the chamber was measured with a temperature probe (4085 traceable, Control Co., Friendswood, Texas) inserted into the chamber. The chamber was equipped with two Teflon−coated septa ports through which the needles of the SPME device were inserted so that duplicate measurements could be made for all calibration points. Details of the calibration process are provided by Kim et al. (2002a).

It should be noted whenever we started a new experiment, newly purchased SPME fibers were used to avoid fiber aging. The average error between different polyacrylate fibers used to analyze volatile fatty acids was 5.4% (n = 8), and the error from the same fiber was 4.9% (n = 4) (Kim et al., 2002a). For carboxen−polydimethylsiloxane (Car−PDMS) used to analyze and detect sulfur compounds, the average error between fibers was 3.7% (n = 8), and the error from the same fiber was 2.9% (n = 4) (Kim et al., 2002a).

Table 1. Physical properties, method detection limits, and odorant threshold for human detection of target analyses.

Compounds	Molecular Weight (g/mol)	Boiling Point[a] (°C)	MDL[b] (ppbv)	Odor Threshold (ppbv)
Propionic acid	74	141.4	1.80	28[c]
Butyric acid	88	163.5	1.32	0.5[d]
Trimethylamine	59	2.9	2.38	0.44[e]
Carbondisulfide	76	46.5	0.19	16[f]
Dimethylsulfide	62	37.3	0.07	0.11[g]
Dimethyldisulfide	94	109.7	0.06	6.4[h]

[a] Obtained from Budavari et al. (1996).
[b] MDL = method detection limit. Determined with eight samples; EPA standard procedure for MDL calculation was followed (Longbottom and Lichtenberg, 1982).
[c] Hellman and Small (1974).
[d] Fazzalari (1978).
[e] O'Neill and Phillips (1992).
[f] Verschueren (1983).
[g] Amoore and Hautala (1983).
[h] Fors (1988).

SPME and Gas Chromatography Conditions

A 75 μm Car−PDMS coating was used to capture TMA, carbon disulfide (CS_2), DMS, and dimethyldisulfide (DMDS), and an 85 μm polyacrylate coating was used for propionic acid (PA) and butyric acid (BA) (Supelco, Bellefonte, Pa.). Car−PDMS has been used for the analysis of reduced sulfurs (Abalos et al., 1999; Hill and Smith, 2000). Polyacrylate fibers are often used for polar compounds (Pan et al., 1995). Analysis of propionic and butyric acids was performed using capillary gas chromatography with a flame ionization detector using a Hewlett Packard 5890 gas chromatograph. GC conditions were as follows: 30 m HP−Innowax column, 0.25 mm i.d., 0.25 μm film thickness, 250°C injection port temperature, 0.5 mm i.d. injection port liner; 270°C detector, and 40 min desorption time (32°C initial temperature for 5 min, increase 3.5°C/min to 118°C, and hold for 10 min).

A Hewlett Packard 5890 gas chromatograph coupled to an HP 5970 mass spectrometer was used in selected ion monitoring mode for TMA and the reduced sulfur compounds. GC conditions were as follows: 60 m DB−1, 0.25 mm i.d., 1.0 μm film thickness, 250°C injection port temperature, 0.75 mm injection port liner; and 40 min desorption time (32°C initial temperature for 5 min, increase 3.5°C/min to 118°C, and hold for 10 min). Both GC systems were

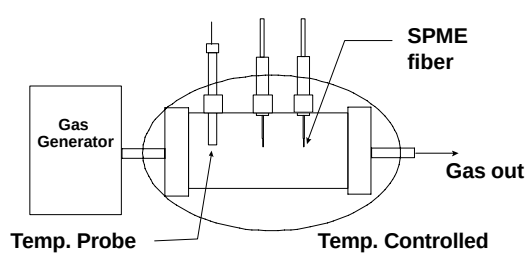

Figure 1. Schematic of the experimental setup for SPME calibration.

equipped with a Merlin microseal septum (Supelco, Bellefonte, Pa.) designed for SPME to ensure reproducibility between injections. More detailed GC conditions are given elsewhere (Kim et al., 2002a).

Sample Collection and Analysis

Fourteen different producers sent samples of their final stage (marketable) compost products to the USDA Environmental Quality Laboratory in Beltsville, Maryland. Once each sample was delivered, it was assigned a code number and stored at 4°C until its odorous compounds were analyzed; the storage duration was less than 3 days.

Subsamples (200 mg of wet weight) of the final products were transferred into a 1.0 L Teflon jar (fig. 2). Samples had been equilibrated for 1.5 h before their headspace gas was extracted. The headspace was flushed with pure N_2 gas at a constant rate (72 mL/min) at room temperature, which was controlled at 20°C ±2°C. Odorous compounds in the headspace were sampled by exposing SPME fibers to the offgas for 1 h in the collection chamber portion of the sample assembly (fig. 2). After sampling, the fibers were withdrawn (self−sealed from the atmosphere) and immediately stored in a freezer (−20°C) until directly injected into the GC for analysis. The GC analysis was performed on the same day to minimize losses.

Compost Quality Analyses

The pH, moisture, and microbial analyses (fecal coliforms, *E. coli*, and *Enterococcus*) were conducted according to the protocols described in Test Methods for the Examination of Composting and Compost (TMECC; U.S. Composting Council, 2002).

Results and Discussion

Ingredients and Biological Properties of Composts Under Study

Each producer provided a list of feedstocks used to prepare their compost and annual volume of materials composted; data are summarized in table 2. All facilities mixed their feedstocks together prior to composting to meet porosity, moisture, and carbon:nitrogen criteria needed to support aerobic microbial decomposition. Six out of the 14 facilities were composting biosolids from their local wastewater treatment plants. Eight facilities were composting yard wastes. Two facilities were using industrial byproducts as a feedstock for their composting. Three facilities composted animal manures or byproducts.

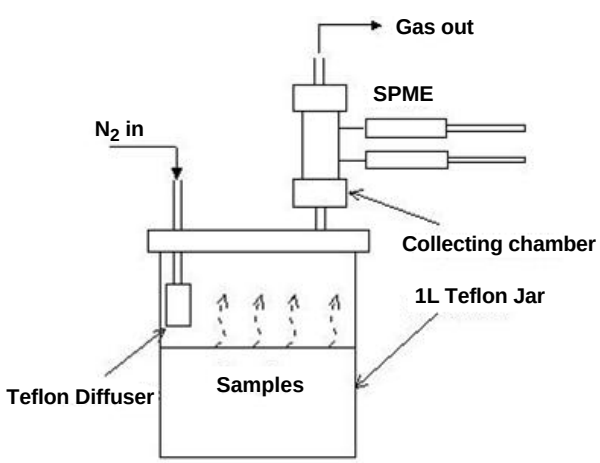

Figure 2. Schematic of the experimental setup for sample analysis.

Table 2. General information on composts and their producers under study.

Site	Feedstock[a]	Annual Volume (m^3)	Pathogen/Metals Testing
1	BS, YW	134,000	Yes/yes
2	BS, YW	N/A[b]	Yes/yes
3	BS, WC	53,000	Yes/yes
4	BS, PH	57,000	Yes/yes
5	YW, FD, MN	15,000	No/yes
6	YW, MN, IB, WC	N/A	Yes/yes
7	BS, YW	54,000	Yes/yes
8	IB, AB	35,000	No/yes
9	BS, WC	38,000	Yes/yes
10	YW	67,000 tons	No/no
11	YW	N/A	No/no
12	YW, WC	38,000	No/yes
13	YW, FT	46,000	Yes/yes
14	CG, TL, YW, CB, FS	42,000	No/yes

[a] BS = biosolids (sewage sludge), YW = yard waste, WC = wood chips, PH = peanut hulls, FD = food, MN = manure, IB = industrial byproduct, AB = agricultural byproduct, CG = coffee grounds, TL = tea leaves, FS = food processing sludge, FT = feathers, and CB = coconut byproduct.
[b] N/A = not available.

The composting facilities participating in this research were asked if they were doing pathogen and metal tests for their composts. All the facilities composting biosolids were performing pathogen and metal testing on their composts. However, regulatory requirements for testing yard debris compost differ by jurisdiction. So, not all those products were routinely tested for these analytes.

Table 3 shows pH, moisture content, and biological properties of the composts provided by the 14 different commercial producers. The high microbial counts of some composts (sites 6, 8, and 9) suggest that thermophilic heating throughout the composting mass was not high enough or long enough to disinfect the material to meet Class A criteria (EPA, 1993). Some of the composts were highly variable in microbial counts, indicating that the composts were not well homogenized.

For most of the samples, pH was in a typically moderate range, with the exception of sites 8 and 14. The latter two used feedstock ingredients that promoted a lowered pH. However, microbial decomposition should not be inhibited in either of these situations. Moisture content of this set of commercial samples ranged from a low of 16% to a high of 63%, but did not correspond consistently with a greater or lesser concentration of fecal indicator microbes. For example, samples from sites 1, 6, and 8 had 63%, 16%, and 49% moisture, respectively, and had corresponding fecal coliform counts of <0.5, 3.1, and 7.1 Log_{10}MPN/gdw.

Odorant Characteristics of Composts Under Study

The mean concentrations of selected odorants in the 200 mg subsamples of each compost characterized by headspace analysis using SPME are shown in table 4. No TMA, which is noticeable by its "fishy" odor, was detected in any of the compost products, either by chemical analysis or informal olfactory perception as reported by the technical staff conducting the analyses. Reduced sulfur−containing

Table 3. pH, moisture content, and microbial count of composts under study.

Site	Feedstock[a]	pH	Moisture (%)	Fecal Coliforms, (Log_{10}MPN[b])/gdw	*E. coli*, (Log_{10}MPN)/gdw	*Enterococci*, (Log_{10}MPN)/gdw
1	BS, YW	7.53 (0.10)[c]	63 (8)	<0.5[d]	<0.5	<0.5
2	BS, YW	7.18 (0.08)	29 (2)	<0.7	<0.7	<0.7
3	BS, WC	8.06 (0.10)	39 (4)	2.9 (3)	1.9 (1.9)	5.9 (5.6)
4	BS, PH	6.99 (0.05)	17 (1)	<0.5	<0.5	<0.5
5	YW, FD, MN	7.25 (0.00)	37 (1)	1.4 (1.6)	1.2 (1.3)	2.5 (2.6)
6	YW, MN, IB, WC	6.90 (0.03)	16 (1)	3.1 (3.1)	1.5 (1.6)	6.3 (5.9)
7	BS, YW	8.77 (0.04)	33 (0)	<0.5	<0.5	<0.5
8	IB, AB	6.44 (0.46)	49 (3)	7.1 (7.0)	3.3 (2.1)	7.1 (5.8)
9	BS, WC	7.25 (0.02)	48 (0)	2.4 (0.6)	1.3 (0.8)	6.7 (6.1)
10	YW	6.98 (0.03)	54 (0)	2.1 (2.0)	2.0 (2.0)	2.8 (2.5)
11	YW	7.91 (0.00)	47 (2)	<0.5	<0.5	<0.5
12	YW, WC	6.52 (0.60)	29 (7)	<0.5	<0.5	<0.5
13	YW, FT	6.92 (0.06)	18 (2)	2.7 (2.5)	2.7 (1.5)	4.4 (4.6)
14	CG, TL, YW, CB, FS	6.29 (0.13)	56 (4)	2.6 (2.8)	2.1 (2.3)	4.4 (4.6)

[a] BS = biosolids (sewage sludge), YW = yard waste, WC = wood chips, PH = peanut hulls, FD = food, MN = manure, IB = industrial byproduct, AB = agricultural byproduct, CG = coffee grounds, TL = tea leaves, FS = food processing sludge, FT = feathers, and CB = coconut byproduct.
[b] MPN = most probable number per gram dry weight (gdw).
[c] Values in parentheses are standard deviations of triplicates.
[d] <0.5 = not detected.

compounds, especially CS_2, were detected in all composts, but the amounts and types of reduced sulfur compounds varied. Generally, composts containing biosolids had greater concentrations and types of reduced sulfur compounds than non−biosolids composts. The presence of reduced sulfur compounds in biosolids compost is consistent with previous reports from the U.S. (Hentz et al., 1992) and Europe (van Durme et al., 1992). Reduced sulfur compounds have also been found in association with livestock operations and composted manure (O'Neill and Phillips, 1992).

Relatively high (PA + BA > 10 ppb) concentrations of PA and BA were found in the headspace of the composts containing biosolids and yard waste (sites 2 and 7). These volatile fatty acids are the products of anaerobic fermentative decomposition, such as occurs in production of silage and in the bovine rumen. Composts from yard wastes can also develop these fatty acid byproducts when anaerobic fermentative conditions occur, even in localized places within a pile. The presence of large numbers of heterotrophic microbes, typically 10^7 to 10^8 MPN per gram dry weight of compost solids (data not shown), combined with microsites of anaerobiosis in a compost feedstock mix containing yard waste, would support production of PA and BA until the carbon sources supporting such a microbial transformation are depleted. The presence of high amounts of volatile fatty acids, e.g., PA + BA > 10 ppb, in marketable composts would indicate that compost is still unstable and that additional rapid decomposition could still take place given proper conditions.

Relatively high concentrations of DMS were detected from compost at sites 8 and 9. These composts also had high counts of pathogen indicator microbes and moderate (approximately 50%) moisture content. This suggests that additional thermophilic composting and/or curing are needed to increase the disinfection process and to further decompose the organic constituents to a stable, mature state. Although excess moisture in compost can lead to anaerobic conditions, and insufficient moisture can retard microbial decomposition

Table 4. Concentrations of odorous gases from final products of different composting facilities.

Site	Feedstock[a]	Moisture (%)	CS_2 (ppbv)	DMS (ppbv)	DMDS (ppbv)	PA (ppbv)	BA (ppbv)
1	BS, YW	63 (8)	BQC[b]	0.2 (0.1)[c]	0.1 (0.1)	BQC	BQC
2	BS, YW	29 (2)	11.2 (7.6)	0.9 (1.0)	5.6 (2.4)	7.9 (5.7)	16.3 (17.9)
3	BS, WC	39 (4)	7.1 (1.0)	3.5 (0.6)	0.7 (0.1)	3.9 (1.8)	ND[d]
4	BS, PH	17 (1)	0.6 (0.2)	0.7 (0.2)	ND	ND	ND
5	YW, FD, MN	37 (1)	ND	0.2 (0.3)	ND	BQC	ND
6	YW, MN, IB, WC	16 (1)	0.7 (0.3)	0.2 (0.1)	0.1 (0.1)	ND	ND
7	BS, YW	33 (0)	1.4 (0.2)	2.1 (0.6)	3.0 (0.4)	11.3 (10.4)	ND
8	IB, AB	49 (3)	12.9 (13.3)	9.8 (15.7)	ND	ND	ND
9	BS, WC	48 (0)	3.3 (1.1)	9.8 (4.2)	ND	3.4 (1.2)	ND
10	YW	54 (0)	BQC	0.1 (0.0)	ND	BQC	BQC
11	YW	47 (2)	0.2 (0.0)	0.1 (0.0)	ND	BQC	ND
12	YW, WC	29 (7)	BQC	0.4 (0.3)	ND	ND	ND
13	YW, FT	18 (2)	ND	1.5 (1.2)	ND	3.0 (2.0)	ND
14	CG, TL, YW, CB, FS	56 (4)	0.6 (0.1)	0.3 (0.2)	0.1 (0.1)	BQC	BQC

[a] BS = biosolids (sewage sludge), YW = yard waste, WC = wood chips, PH = peanut hulls, FD = food, MN = manure, IB = industrial byproduct, AB = agricultural byproduct, CG = coffee grounds, TL = tea leaves, FS = food processing sludge, FT = feathers, and CB = coconut byproduct.
[b] BQC = below quantification level.
[c] Values in parentheses are standard deviations of triplicates.
[d] ND = not detected.

during the composting process, neither high nor low moisture content in the final product was associated with clearly greater or lesser amounts of specific odorous compounds (table 4). This is evident from a comparison of compost sample sites 1, 3, 4, 8, and 9 with moisture contents of 63%, 39%, 17%, 49%, and 48%, respectively, and concentrations of some of the odorous compounds (CS_2, DMS, DMDS, PA, and BA) similar, higher, or lower than those of the other sites.

Conclusion

This is the first comparative report of odorous volatile compounds from commercially marketed composts in the U.S. The SPME method coupled with GC/FID/MS analysis, as previously reported by Kim et al. (2002b) for use with sewage sludge, was used to evaluate selected odorous volatile compounds from composts. Composts containing biosolids continued to emit reduced sulfur−containing compounds in varying amounts (0.1 to 12.9 ppbv). High concentrations of the volatile fatty acids PA and BA in the marketable products were only detected from composts containing both biosolids and yard wastes/woodchips. This suggests that the decomposition of the organic constituents in these materials still remains relatively incomplete, and that some carbon source remains relatively available to the existing microbial community and that anaerobic biological decomposition is continuing. Volatile fatty acids result from the fermentative decomposition of organic materials such as those found in yard wastes and silage. Because of the potentially phytotoxic effects of some short−chain volatile fatty acids, e.g., acetic, propionic, and butyric acids (Lee, 1977; Lynch, 1977), additional composting and especially curing may be helpful to further stabilize such products. This would also benefit those composts in which insufficient pathogen reduction was achieved, as evidenced by relatively high numbers of fecal coliforms, *E. coli*, and *Enterococcus* ($>10^3$ MPN/g).

Acknowledgements

Financial support for Dr. Hyunook Kim from The University of Seoul is appreciated.

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WASTE CONNECTIONS, INC.
Connect with the Future

November 2, 2012

VIA US MAIL & ELECTRONIC MAIL
Mr. Kyle Dorsey
Department of Ecology
PO Box 47600
Olympia, WA 98504

Re: Comments in Regard to WAC 173-350 – Solid Waste Handling Rules Amendment Organic Waste Compost Facilities

Dear Mr. Dorsey:

The purpose of this correspondence is to provide comment on the above-captioned Amendments. These comments are being submitted by Waste Connections, Inc., on behalf of our Subsidiary Facilities which include, Silver Springs Organics ("SSO") and LRI. The collective operating experience of our facilities in the State of Washington exceeds 20 years. We appreciate the opportunity to provide comment as follows:

- **173-350-220 (4) Composting Facilities – Operating Standards (permit requirements): (f) pg 33 through (M)(vii) pg 34** This respective rule is proposing the creation of multiple "plans" ranging from community outreach to progressive odor management. All of our facilities currently have very complete and detailed operating plans, which are all inclusive and representative of demonstrated operational prudence, community awareness, and success. This proposal to require a multitude of additional and individual plans would be costly and redundant for our facilities. Plans start on page 33 (f) of the document and go to page 34 (M) (vii) and plans of this nature should be left fully to the discretion of the Jurisdictional Health Department which has most familiarity with specific operations and the adequacy of current operating plans.

  (B) Progressive Odor Management Plan SSO/LRI have detailed Plans of Operations for our facilities. Additionally we have detailed Odor management Plans. These plans have been approved by our JHDs after thorough review. Section (B) calls for operational improvements that "could be" made if nuisance odors are identified beyond the facilities' boundaries. SSO/LRI composting facilities are highly engineered systems. There is a multitude of "what ifs" "then what's" that could be done at our facilities. This is precisely why we hire experts and have regulatory oversight. Therefore, with the state criteria of no nuisance odor at the property boundary and JHD regulatory oversight, the certified compost experts are able to work quickly and effectively to correct the nuisance if one were to occur onsite.

- **173-350-220 (4) Composting Facilities – Operating Standards (permit requirements): (f) pg 33 through (F)pg 34 Mass balance calculations** - needs to be deleted as it has no realistic bearing on the composting process. Composting is not a mathematical calculation, yet a process affected by factors such as seasonality, feedstocks, and diversion rates. As successful composters, our operations adapt to these changing variables and a myriad of other conditions. An arbitrary calculation such as mass balance could actually enable inappropriate processing based on certain conditions.

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- **173-350-220 (4) Composting Facilities – Operating Standards (permit requirements): (iii) A description of how wastes and organic materials including incoming feedstocks, composting, curing, and composted materials are to be handled onsite during the facility's life, including:**
    - **(A) Maximum capacity in cubic yards for all materials on-site at any one time. The jurisdictional health department may require cumulative capacity for materials or separate capacities for incoming feedstocks, composting, curing, and composted materials, or any combination;**
    - **(B) Throughput in tons or cubic yards of solid waste feedstocks processed in a given amount of time. The jurisdictional health department may require monthly or annual throughput;**
        - By Ecology's own definition of Capacity WAC 173-350-100 includes "all material" including "composted materials" and bulking agents (according to Dawn Marie-Maure Ecology representative at public Hearing) within a limited capacity of a site. However, composters are encouraged to use large volumes of woody bulking materials onsite as a critical part of their operations. We do not believe, Ecology has proven that bulking agents contribute to the areas of concern addressed by this rule, and bulking agents should not be included in the throughput or capacity calculations for the facility. This same concern was registered to Ms. Kathleen Scanlan in our letter dated March 28, 2012 during the public comment period for the draft of this same rule.

- **WAC 173-350-100 Definitions. Capacity.** By including composted materials "finished product" into the definition of capacity, many burdensome criteria are triggered throughout the rule. As previously mentioned in our correspondence to Ms. Scanlan on March 28, 2012, once composted material passes the testing requirements and is now a product, it is no longer a solid waste and should no longer be subject to the chapter. Therefore, sections such as Design Standards (e) to treat all run-off, of product piles as leachate is costly and an unfair business advantage to those that are not subject to the same solid waste standard. Finished product storage at any location should then be subject to the rules of solid waste storage i.e.; wholesale and retail yards, etc. Therefore, to remedy the situation, as stated previously, finished compost is not a solid waste and should not be regulated under this Washington Administrative Code.

Thank you for allowing LRI and SSO to make comments on the proposed amendments to WAC 173-350. We also thank you in advance for considering our comments. If you should have any questions, please do not hesitate to contact me personally at 253-377-0362.

Respectfully submitted,

Jody L. Snyder

Jody L. Snyder
Director of Regulatory and Governmental Affairs

Cc: Eddie Westmoreland, Western Region Vice President of Governmental Affairs, WCI

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Dorsey, Kyle (ECY)

From: Art Starry [starrya@co.thurston.wa.us]
Sent: Wednesday, October 24, 2012 2:52 PM
To: Dorsey, Kyle (ECY)
Cc: Bill Dean; Gerald Tousley
Subject: Re: Proposed Rule for WAC 173-350 WAC Solid Waste Handling Standards
Attachments: WAC 173 - 350 Compost rule comments from Thurston County.docx

Follow Up Flag: Flag for follow up
Flag Status: Completed

Hi Kyle,

Attached are a few comments on the draft rules. Please contact Bill or Gerald if you have questions. I mentioned a few of these to Laurie at the EH Director's meeting last week.

Art

Art Starry, R.S.
Environmental Health Division Director
Thurston County Public Health and Social Services
412 Lilly Road NE
Olympia, WA 98506
(360) 867-2587 - phone
(360) 867-2601 - fax

starrya@co.thurston.wa.us>>> Kyle Dorsey <kdor461@ECY.WA.GOV> 9/25/2012 11:22 >>>
Hello, Ecology has published proposed amendments to Chapter 173-350 WAC - *Solid Waste Handling Standards*. The focus of the amendments is around composting, anaerobic digestion, and other methods of converting organic waste to products. The proposed amendments, related documents, and information on public hearings and opportunity for comment can be found on our web pages at http://www.ecy.wa.gov/programs/swfa/rules/rule350.html.

The Rule Proposal Notice is attached and provides a summary along with information on hearings and comment opportunities.

If you represent an organization or publication, please consider sharing this message and information with your constituents or subscribers.

Remove your name from the LISTSERV, join the LISTSERV, or change your password.

Kyle Dorsey
Rules and Policy Specialist
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WAC 173-350
Composting Rule Changes
October 24, 2012

Comments by Thurston County Environmental Health Division
Contacts:
Bill Dean (360) 867-2639
Gerald Tousley (360) 867-2589

General comment: Please offer workshops to LHJ's on the new rules after they are adopted.

Comments on the draft rules (9/18/12 Draft).

Page 19 –Table 220 A

(3)(b) and (i), should read, meet the requirement s in (3)(a) not (3)(a)(i).

Page 24 - (a)(ii) last sentence, change force to forced.

Page 24 - (3) (a) (ii) (b). Most LHJs do not have engineers or staff that can fully review the documents required under this section. Can the WAC state somewhere, perhaps under 173-350-710, that the LHJ can charge the applicant costs for retaining engineering services necessary to review these plans in needed?

Page 28 - (vi)(A) last sentence - ***Washington*** Organic Recycling Council needs to be capitalized.

Page 28 (vi)(A)

- It would be more efficient if training programs and curriculum were approved by Ecology, rather than making each LHJ responsible. An alternative could be to allow LHJs to approve alternative training programs for small or simple compost proposals.
- Is there a better term than "hands-on" to describe the desired training? Maybe something like "Training must consist of classroom and field/laboratory course work that…"

Page 28 - (vi)(A) and (B) - Where are the training records kept and how long?

Page 28 (vii) (B) – Language should be added that indicates an aerated static pile need to be turned or that some other method is employed to assure that pathogen reduction temperatures and complete composting occurs throughout the entire pile. Without turning or mixing areas at the edge of the pile might not be composted completely.

Page 29 (x)(B) - at the end of the sentence remove the words ....based on historical data for a particular facility.
Page 33 (vi)(i) – rewrite the last sentence to say the feedstock must be approved by the permitting agency.

Washington State
Environmental Health Directors
Leading, Developing & Influencing Environmental Health

PO Box 68
South Bend, WA 98586

October 31, 2012

Mr. Kyle Dorsey
Washington State Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

RE: COMMENTS ON SOLID WASTE REGULATION CHAPTER 173-350 WAC – COMPOSTING

Dear Mr. Dorsey:

In addition to the comments made by the Kitsap Public Health District (enclosed), the Washington State Environmental Health Director's Association would like to make the following comments on behalf of the solid waste committee's recommendation.

WAC 173-350-250 Anaerobic digesters. The association suggests that language be added to this section that provides local health jurisdictions with the ability to permit these as solid waste facilities if they as the local health official, do not agree in writing that a biosolids permit or biosolids management plan issued by the Department of Ecology is adequate to be protective of human health and the environment. The association believes that suggestive language that was used in WAC 173-350-220 (a) (v) (A – C) is appropriate under the anaerobic digesters section as well.

The Washington State Environmental Health Director's Association appreciates the opportunity to provide comment on the revisions to WAC 173-350. Should you have any questions or require additional clarification of any comments, please do not hesitate to contact the solid waste committee chairs Jeff Martin (509) 493-6211 or James Rivard (509) 962-7005.

Sincerely,

Brent Stenson, Statewide Chair
Washington State Environmental Health Directors
509-488-2031
brents@co.adams.wa.us

Enc: Comments from Kitsap Public Health District

CC: Jeff Martin, Klickitat County Public Health, Solid Waste Committee Co-Chair
James Rivard, Kittitas County Public Health, Solid Waste Committee Co-Chair

Tamara Thomas, P.E.
Owner & Manager of Terre-Source LLC
720 S. Main St., suite 207
Mount Vernon, WA 98273

November 2, 2012

Mr. Kyle Dorsey
Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Dear Mr. Dorsey:

This letter discusses my concerns (and accolades) with this second version of the revised WAC 173-350-220 and other sections as related to composting. Thank you for the opportunity to comment and hopefully, influence the direction of this regulatory revision. My small business, Terre-Source LLC, for the past 10-years, has served the compost industry in Washington state and other states and provinces.

Terre-Source LLC provides numerous services for the compost and recycling industry including: facility design, permit application preparation including Operations Plan preparation, facility operation training, product quality improvement consulting, documentation and record keeping review, compliance auditing, market consulting, representative sampling and other technical consulting. A number of the clauses in this revised version threaten my livelihood directly, as well as limit the ability of my clients to divert (from landfills) and process organic waste materials into compost products that provide numerous environmental benefits.

CONCERNS

The following specific sections are potentially damaging to my business and/or the composting industry:

Required Facility supervisor training description:

Section 173-350-220(4)(a)(vi)(A) most directly targets a portion of my business by requiring facility supervisors to receive "appropriate training…through organizations such as WORC, SWANA, USCC or other training as approved by the JHD". Because there is no guidance as to what criteria could be used to approve a training program, the training that my clients ask me to provide might not be accepted purely due to lack of time or guidance to approve it.

I provide on-site training in the basics of composting and more. My training occurs on that client's specific technology, facility, and feedstocks, which is most relevant to a composter. Also, I train directly to their Operations Plan and permit so they can fully understand the

implications and requirements that are in those documents. I believe this is actually more valuable to my client and to the industry and to the JHD and Ecology because my clients/students are going to know the regulations that directly affect them and are going to be more likely to compost well and within their permit than if they only got generic basic composting training. The WORC and other national compost training is very valuable – but so is mine. If the goal of this regulation is to educate composters in the ability to compost under the applicable regulations and in an environmentally responsible manner on their own facility, my training is equally or more efficient. What additional (unpaid for) steps will my company have to perform to be "approved" by the 35 JHDs in Washington state?

I would prefer this section be worded:

> (A)"Facility supervisors responsible for daily operation must receive training or be able to document training <u>or competency</u> in the basics of composting <u>before the end of</u> the first year of supervising the facility. Training must consist of <u>basic compost theory</u> as well as hands-on <u>or on-site</u> course work and conclude with a certificate of completion that must be kept on-site at all times."

Removing the following sentence that suggests "~~appropriate compost training…~~" by "~~organizations such as…. or other training as provided by the JHD~~" would remove the implied negative connotation of "other training…". Such promotion should be in guidance or informally provided – not written into the regulation.

Finished compost regulation:

- 173-350-100 Definitions-Capacity. Including "All materials" including "composted materials" and <u>bulking agents</u> (per Dawn Marie-Maurer/Ecology) within a limited capacity of a site is counter productive to effective composting. Ecology should encourage large volumes of woody bulking materials on site at all times because of their critical role in minimizing odors, soaking up moisture, and biofiltration of odorous processes and materials. Including a capacity requirement on finished compost will artificially inflate the capacity estimates of facilities across the state. Additionally, limiting the ability to mature large volumes of compost at a compost facility when necessary to a) increase the value of compost products, b) wait out a low value market, or c) wait out a low sales season will significantly impact the ability of a composter to operate in an economically viable manner[1].

- 173-350-220(10) Finished compost must continue to be considered "not a solid waste" as in the current regulation. Compost improves water quality, reduces erosion, increases infiltration, etc. If finished compost cannot be considered "not a solid waste" any water or liquid contacting compost will be, by definition, leachate – including roadsides, gardens, lawns, agricultural fields. This will significantly impact the composting industry and Beyond Waste program efforts to divert this material from landfills.

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[1] Washington state has developed a composting industry that relies on both tipping fees and finished product sales for the economic viability of a facility. This regulation would shift that reliance onto the tipping fee almost exclusively. Several impacts could be expected due to that shift: 1) tipping fees must increase which closes the gap between composting and landfill costs which will result in more organic materials being landfilled. 2) compost sales prices will fall resulting in under valuing of compost. In the short run more compost may be sold. But people do not value what they do not pay for. In the long run, product quality will suffer, people will not have confidence in the quality and will use less compost resulting in more compost landfilled and/or used as daily cover in landfills or other less than 'highest and best' uses.

- 173-350-220(4)(g)(ii)& (iii) As a consultant with high stakes in the compost industry as well as a firm belief in the value of this product, I am continually encouraging my clients to understand the value of aging past the minimum stability requirements. Several of my clients currently mature their high quality compost products for well over 12-months. If they now have to manage those piles to a set porosity and moisture content, all the testing and experience that has gone into development of those products could go up in smoke. One of my best clients has assured me he will close his doors if these requirements are enacted. Based on my clients' facilities, I am not at all convinced that the finished compost piles are significant sources of odors. If you are quite sure that a particular facility is having a problem with odors from their finished compost pile, please deal with that facility directly. Do not impose blanket requirements on facilities that do not have that problem and do not have the ability to jump through expensive and limiting regulatory hoops for no environmental or other benefit. The requirements of porosity and moisture content limits for finished compost will stifle innovative and responsible compost manufacturing techniques.

Analytical requirements:

- 173-350-220(4) Table 220B: Four new parameters have been added to the required analyses in this new table and one has been redefined to the extent that it is meaningless.

  - The new parameters: EC, C:N, Moisture at 70ºC [which has no meaning?], and organic matter do not pertain to Ecology's mandate of protecting human health and the environment. These are market parameters that need to be left to our markets. My clients test for what their customers want to know. They test the specific piles that make sense to them and their customers and the projects and specifications that pertain to them. These requirements should not be added to a regulatory frequency of testing.

  - Physical contaminants – This parameter is also a market based requirement. [The only elements that relate to HH&E are the chemical contaminants named within this definition of "paint, … bonding agents or chemical preservatives such as creosote, pentachlorophenol or copper-chrome-arsenate." If Ecology has any indication that these chemicals have been a problem in compost to date, the elements can be analyzed for. I am interested in the data showing that to be the case. However, such materials are most likely already prohibited in a facility's Operation Plan and if they were accepted, the compost would likely not pass the metals requirements of the current Table A.] However, this new "physical contaminants" parameter includes rocks and potentially larger pieces of wood AND comes with a strict limit. This requirement is unreasonable, un-necessary, very expensive for my clients, would potentially doom a great deal of good healthy compost to landfill, and is therefore, also, not responsible. The definition of "Physical contaminants" should be changed to only include harmful materials – or return to the "manufactured inerts" requirement.

New Odor Plans (Especially "Progressive Odor Management Plan"):

- 173-350-220(4)(f)(ii), (ii)(A), and (ii)(B): These sections add 3 new odor related plans to the requirements of an Operations Plan. 1) I work very hard to create clear, concise, yet comprehensive Operations Plans that hold enough value that the operators will actually read and use them. Requiring 3 Odor related plans and 2 additional topics within the

current Nuisance Odor Management Plan runs counter to those goals. 2) Requiring a "Progressive Odor Management Plan" that requires a list of "facility and operational improvements that could be made if nuisance odors are identified…" is also a really bad idea. Besides being a labor intensive imagination exercise, such a 'list' would distract operators and regulators by encouraging (or worse, requiring) a composter to implement such steps prematurely which could divert attention from determining the actual cause and utilizing all the engineering, creativity and information available at the time to solve the actual odor problem. This requirement is not only excessive, it could be expensive and counterproductive to efficient, odor reducing composting.

Preliminary Cost-Benefit and Least Burdensome Analyses:

- Ecology's estimate of the cost of the Operations Plan changes of 20-hours by someone making a prevailing wage of $16.86 - $19.30 is so far off it is insulting. The changes required to an existing Operations Plan in this revised regulation, at a minimum, include:

  - Calculation and description of "Maximum Capacity"
  - Calculation and description of "Throughput"
  - Description of how to "prevent the migration of agricultural pests"
  - Procedure to reduce physical contaminants in composted materials to meet testing parameters in Table 220B
  - Change in analytical parameters and frequency at which the compost must be sampled
  - List of feedstocks with general description of the source (removing reference to Type I, II, III and VI feedstocks)
  - Revision of the Leachate Management plan to accommodate leachate collection on Finished Compost Plans
  - Description of how facility staff will receive appropriate training…
  - ODOR PLANS: Plan to control air contaminants; Plan to document odor complaints, **Progressive Odor Management Plan**; Nuisance Odor Prevention and control elements of facility maintenance activities; Description of how feedstocks with high moisture or potential for high odors will be managed…;

  A professional engineer (per WAC 173-350-715) should prepare these documents and calculations and would probably also need to communicate with the JHD around submittal of a permit revision to accommodate these changes. I very roughly estimate it would take an experienced P.E. who is familiar with the composting industry and the individual facility on the order of 50 hours which could easily run a single facility $5,000 just to incorporate these new plan requirements. This does not include JHD permit submittal fees and review costs (as many JHDs now charge for their time to review documents and visit sites upon permit revisions). It is even possible that a County would require a SEPA process to accompany the permit revision. This adds much more

costs. And none of this includes costs to the facility to implement any of the described changes.

- While my business is likely to gain work related to re-doing these Operations Plans [assuming my clients don't simply go out of business], I would far prefer helping them to develop higher quality compost products, or streamline their operations to be more efficient and reduce their carbon and environmental footprints or other impacts. Those clients and their neighbors and the state would, then, get more for their money and be happier and the industry would be healthier for that investment.

- There is a pervasive assumption in these analyses that all permitted compost facilities are owned and operated by large businesses. This is far from the truth. Many permitted facilities are family owned and/or small businesses. Additionally, many of the companies that service the compost industry in Washington state are small businesses. Assuming that only large corporations will be impacted and can afford these excessive and ineffective regulations is inaccurate and will damage the economy of our state as well as my livelihood.

- Additionally, this document (Preliminary Cost-Benefit and Least Burdensome Alternative Analyses) not only massively underestimates the costs of implementing all these revisions, it also purports benefits that I do not believe will be realized. This document should be re-thought and re-written.

ACCOLADES

As mentioned above, there are sections in this revised regulation that would be helpful to certain categories of composters and that would streamline compliance with the existing regulation. These areas are:

Evaporation Data

Explicitly allowing for the use of evaporation data in the design of leachate and stormwater collection structures is important especially in Eastern Washington. Evaporation is a significant force in some areas and not allowing for that can result in excessively large ponds that are overdesigned and un-necessarily expensive.

Testing Frequency

By implementing an across the board testing requirement that all compost must be tested "every 5,000 cy or annually", makes a lot more sense than the current requirements and will streamline testing procedures within the industry.

In closing, I ask that Ecology re-revise the proposed WAC 173-350-220 regulation. As currently written, this regulation is likely to reduce recycling capacity for organic wastes in Washington as well as eliminate numerous small businesses. The overwhelming number of revisions in this regulation are not science based health and safety oriented and will have serious negative implications and high costs for the composting industry and small business associated with that industry. After such a re-revision and a realistic analysis of the costs and potential benefits of the revision, another round of public comment should be taken to ensure additional unintended consequences are not invoked.

Thank you for your consideration.

Sincerely,

Tamara Thomas, P.E.
General Manager
Terre-Source LLC

P.S. Because the items discussed above are of a critical nature to my business it is important to me that they not be diminished by inclusion of multiple other smaller flaws and inconsistencies in this regulation revision. However, in the hopes that such other elements might secondarily be addressed, I have added the following table to summarize those more minor flaws and issues in this revision.

Minor Flaws, Questions, Issues with Concepts or Wording in the Second Proposed Revision of WAC 173-350 (not included in discussion above)	
General	There needs to be an allowance and procedure for running a pilot test on a new technology or new feedstock without going through an entire permit revision or permit process. Facilities could then determine how and if a particular process/feedstock works as well as being able to "demonstrate" as in §(4)(a)(vii)(D) "an equivalent reduction of human pathogens"… or other aspect.
Pg 2 – WAC 173-350-030	Effective dates. These revisions are costly and far-reaching in a time of economic crisis within this industry. Facilities should be given at least 60-months for compliance with any additional requirements.
Pg 11 -100 Table 220A	"organic materials" versus "organic feedstocks" – these two definitions are interchangeable with respect to the composting regulations and confuse the requirements. A more thoughtful approach to terminologies should be used. In Table 220A "Organic Materials" is used but should be "Organic Feedstocks"
Pg 16 -100	What is the purpose of excluding sod from yard debris? This exclusion should not be made in the definition as sod is clearly a yard debris. If some compost facilities do not want sod, they can easily exclude it from their acceptance list. This should not exclude acceptance of sod if a facility is equipped for it.

Minor Flaws, Questions, Issues with Concepts or Wording in the Second Proposed Revision of WAC 173-350 (not included in discussion above) – pg 2 –	
Pg16 -220(1)(v)(B)	Biosolids Composting - This requirement effectively imposes conditions of this regulation on permits issued and managed under 173-308. Have these facilities and department been adequately informed and allowed to comment?
Pg 21 220(1)©(v)	What is the purpose of requiring 50% of material to be "used" w/in one year? Compost improves with age. I encourage longer curing time for many types of compost and several clients 'age' their high value compost for over 2-years to achieve the high quality parameters in their products.
Pg24 220(3)(e)	"Minimize production of leachate and runoff by…" Why if its managed? Especially on the Eastside water availability is limited. It might be most efficient to mix and use run-off to optimize compost moisture content & prevent excessive use of well water
Pg29 – Table 220B	Analyses: • "Physical contaminants" requirement should not include "natural materials" such as rocks or large pieces of wood, etc. Only harmful parameters should be regulated • What is the purpose of requiring analyses for which there is no required limits" These are not health and safety parameters… they are market parameters that should not be required in regulation. • What is Moisture at 70ºC?? This makes no sense. • Biological stability- this is also a market parameter albeit one that was in the last version of the regulations. Once PFRP and VAR have been met additional stability requirement should not be imposed under health and safety requirements.
Pg33 – 220(4)(f)(i)	List of feedstocks including general description of the source… Sources may change without impacting the behavior of the feedstocks. I see no purpose beyond additional paperwork, for this clause.
Pg34 – 220(4)(f)(iii)(A)	Maximum capacity required for "all materials on-site" including finished compost and bulking materials. This simply inflates the current capacity estimate. Either regulate 'capacity' or 'throughput'. Limiting both concepts un-necessarily restricts innovation and effective, creative solutions to recycling organic materials and keeping them out of the landfills.
Page 34 – 220(4)(f)(iii)(D)	"grinding to reduce the size of physical contaminants does not meet the requirements of this section" I fail to see how this pertains or is needed for composting. The contaminant requirement is by weight. Grinding does not apply. This should be removed.
Page 36 – 220(9)	"within 30-days of completing construction a facility must provide copies and must not begin operating until the JHD has determined construction was completed… etc" There should also be a time frame within which a JHD must complete their determination. Extending this determination time will be necessarily expensive for a facility which has spent significant money to build a facility that cannot be operated.

November 1, 2012

Mr. Kyle Dorsey
Department of Ecology
PO Box 47600
Olympia, WA 98504

RE: Proposed Amendments to Chapter 173-350 WAC Solid Waste Handling Standards

Dear Mr. Dorsey,

Thank you for the opportunity to comment on the proposed amendments to Chapter 173-350 WAC Solid Waste Handling Standards. Lenz Earthworks is a family-owned organics processor dedicated to providing sustainable organics composting in Northwest Washington. Following are comments and suggestions to the proposed rule.

No.	Rule Section	Proposed Language in Rule	Comment / Suggestion
1	WAC 173-350-100	"Physical contaminants" as they relate to incoming feedstocks and compost quality means inorganic and organic constituents that are not readily decomposed during the composting process including, but not limited to, plastics, glass, textiles, rubber, leather, metal, ceramics, rocks, polystyrene, and wood pieces containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate.	In the proposed description "rocks" are called out as a contaminant. We suggest removing rocks from this description since they do not have the same characteristics or origin as the other anthropologically developed or contaminated materials listed and do not pose the same contamination issues.
2	WAC 173-350-100	"Representative sample" means a sample that can be expected to exhibit the average properties of the sample source.	In the proposed description the term properties is used without extent. We suggest refining the definition to include the scope of average properties of interest. For example: "*Representative sample means a sample that accurately reflects the average chemical, biological or physical characteristics of interest from the source of feedstock, bulk material or compost batch in question.*"

			We believe it is important to define the properties under review since a representative sample meant to exhibit the average properties of one constituent may not be the same as another (e.g. a representative sample for a microorganism analysis may be different from a representative sample for a moisture content analysis)
3	WAC 173-350-100	"Capacity" means the maximum amount of material that can be contained. Capacity is identified by the conditions of exemption, the permit, or the plan of operations as approved by the jurisdictional health department or the department. All material includes, but is not limited to, incoming waste, feedstocks, stockpiled wastes, active composting, curing piles, composted materials, and sorted recyclable materials on-site.	Materials such as clean wood and bulking agents do not meet the definition of a solid waste and therefore should not be included in the definition of capacity. This distinction should be clearly stated.
4	WAC 173-350-100	"Composted material" means organic solid waste that has undergone biological degradation and transformation under controlled conditions designed to promote aerobic decomposition at a solid waste facility in compliance with the requirements of this chapter. Composting is a form of organic material recycling. Natural decay of organic solid waste under uncontrolled conditions does not result in composted material.	“Composted materials” should not include “Finished Compost Product” that meets performance standards of this rule. Finished Compost Product should be defined. The definition should include the performance standards of this chapter.
5	WAC 173-350-220(3)(b)	The owner or operator of a composting facility must prepare and provide to the jurisdictional health department engineering reports, plans, and specifications that address the design standards of this subsection. The reports, plans, and specifications	We suggest that rather than require “reports, plans, and specifications be prepared by an engineer licensed in the state of Washington” that a more reasonable standard might be that “reports, plans and specifications must be prepared under the supervision of a professional engineer licensed in accordance with chapter 18.43 RCW”.; and, the requirement should include a

		must be prepared by an engineer licensed in the state of Washington, and must include:	waiver for operational components and systems that may be pre-engineered. Example text might include: "Upon request of the owner, the department may waive the above requirement for a professional engineer for construction or modification of facilities." These suggestions are based on the following: 1. A typical engineering firm will often assign tasks to Engineer-In-Training personnel. Including the phrase "under the supervision" allows this common practice. 2. Some "off-the-shelf" operational equipment may be pre-designed by a professional engineer that is licensed in another state. Such equipment, that has a proven design, might be used in an overall site/system design or upgrade. 3. The suggested language is consistent with language used in other similarly complex systems such as wastewater treatment systems (e.g. WAC173-240-160)
6	WAC 173-350-220(3)(e)	Composting facilities must minimize the production of leachate and runoff by designing storm water management features such as run-on prevention systems, which may include covered areas (roofs), diversion swales, ditches, or other features designed to divert storm water from areas of feedstock preparation, active composting, and curing	This section requires the design of storm water management features but does not provide any performance standards. Where a facility is covered by performance standards from a general or site-specific permit this condition should not be applicable.
7	Table 220-B Testing Parameters	Physical contaminants are limited to <1 percent by weight total, not to exceed .10 percent film plastic	A new performance standard for Physical contaminants is proposed; however, no approved test method exists to prove compliance with this standard. We recommend no change to the current performance standard for manufactured inerts.
8	Table 220-B Testing Parameters	Physical contaminants are limited to <1 percent by weight total, not to exceed .10	We agree with Ecology that increased household composting is likely to increase the prevalence of film plastic

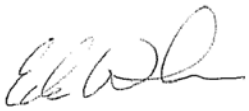
		percent film plastic	in feedstock; however, the requirement to limit film plastic to 0.10 percent is a potentially onerous requirement that has not been adequately evaluated. The Department of Ecology's "Small Business Economic Impact Statement", Publication No. 12-07-002 and "Preliminary Cost-Burdensome Alternative Analysis", Publication No. 12-07-001, state that "Ecology believes facilities through contracting with feedstock providers, or additional screening of compost can comply with this new requirement." and, "Ecology could not at this time confidently quantify the cost of finer screening of compost material." respectively. Based on the lack of information provided in the analyses we do not believe that imposing this more restrictive requirement is prudent at this time. A more complete impact analysis and list of alternatives to meet this new requirement should be developed prior to implementation of a new standard. We recommended no change to the current performance standard for manufactured inerts.
9	Table 220-B Testing Parameters	Moisture at 70C - No range	We assume that this is a typographic error since there is no standard analysis for moisture at 70C.
10	WAC 173-350-220(q)(iii)	Minimize odor by maintaining porosity of composted material piles and managing moisture levels in composted material piles, not to exceed sixty percent moisture	Moisture content of a composted material pile is only one criterion that may contribute to odor issues. Using this single physical parameter to attempt to minimize odors is not a scientifically proven approach. Additionally, odors are addressed in numerous other sections of this standard, as well as, other permit requirements. We recommend that this language be removed from the proposed rule.
11	WAC 173-350-220(10)	(10) Composting facilities - Designation of composted materials (permit requirements). When used on-site or distributed off-site, composted materials meeting the ((~~limits for metals in Table A and the~~)) testing	Language in the current version of WAC 173-350-220 includes a differentiation between "Composted Material" and "Finished Product". Finished Product that meets the performance standards of the rule is no longer subject to the conditions of this chapter. This is an important

		parameters of Table 220-B ((~~of this section, and having a stability rating of very stable, stable, or moderately unstable as determined by the analysis required in subsection (4)(a)(viii)(D) of this section, shall no longer be considered a solid waste and shall~~)) are no longer ((~~be~~)) subject to this chapter. Composted materials that do not meet these ((~~limits are still considered solid waste and~~)) requirements are subject to management under chapter 70.95 RCW, Solid waste management--Reduction and recycling	distinction and should be maintained. The marketing and sales viability of finished compost products rely on this distinction to instill consumer confidence in the beneficial nature of the product. Without this distinction compost could still be defined as a solid waste. We recommend that the current language remain in the rule.

In summary we believe that the rule requires significant additional work to adequately protect human health and the environment and to enhance the future of responsible organics recycling in Washington.

Please do not hesitate to contact me via telephone (360-508-3180) or via e-mail (edward@lenz-enterprises.com) if you have any questions or comments about the foregoing information.

Sincerely,



Edward Wheeler
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5210 SR 532 | PO Box 868
Stanwood, WA 98292

THE TULALIP TRIBES

Board of Directors:

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Deborah Parker – Vice-Chairwoman
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6406 Marine Dr. TULALIP, WA 98271
Phone (360) 716-4000
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The Tulalip Tribes are the successors in interest to the Snohomish, Snoqualmie, and Skykomish tribes and other tribes and bands signatory to the Treaty of Point Elliot

November 2, 2012

Kyle Dorsey
Washington State
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Proposed Rulemaking to modify Solid Waste rules under WAC 173-350

Dear Mr. Dorsey,

The Tulalip Tribes are a federally recognized Indian tribe comprised of a confederation of Snohomish, Snoqualmie, Skykomish people and allied bands who reside on the Tulalip Indian Reservation. The Reservation was established pursuant to the Treaty of Point Elliot, January 22, 1855 (12 Stat. 927) and by the Executive Order of December 23, 1873.

Tulalip is very concerned about odor management in regards to large commercial composting operations. Neither the current nor the proposed new rules adequately address odor issues with composting operations. There are currently two large operations that have been causing odor problems for neighboring communities; one in the Everett/Marysville/Tulalip area and the other in the Maple Valley area. Both operations are severely impacting high density population centers and businesses. The odor issues are not only disruptive to the daily lives of neighboring communities and businesses, but may also cause severe health problems.

In subsection (g) (iii) on page 35 of the proposed rules, the agency is only proposing to require maintaining porosity of the composted piles and a maximum moisture content of 60% to minimize odor emissions. These requirements are necessary to properly compost the materials and prevent the piles from turning anaerobic, but are not usually what is causing odor problems with composting operations. Two of the primary causes of odor problems with composting operations are too low of a carbon to nitrogen (C:N) ratio and either too high or too low pH levels of the materials.

Table 220-B for testing parameters on page 29 lists C:N ratios, but does not have a range limit. The table also lists pH with a range of 5 – 10, which is a very wide range to allow for composting operations. That range appears to be selected to avoid having the compost operations fall under the hazardous waste regulations, more than anything else.

The lower the C:N ratio the more volatile organic compounds (VOC)'s and ammonia is released during the composting process. The requirements for the C:N ratios would need to vary depending on the type

of composting operation being regulated. Facilities only composting wood waste can easily maintain a high C:N ratio while composters using food waste and grasses need to mix in wood waste to raise the ratio.

When the pH levels rises above 7.5 to 8 the nitrogen compounds are more readily driven off as ammonia during the composting process. When the pH level drops below 6 - 6.5 the VOC emissions may also increase.

Odor problems appear to be at the worst during hot days with little or no wind. To reduce odor problems during these weather conditions, compost piles should not be turned during the first two weeks of composting. Turning the piles allows the odorous compounds to be released more quickly.

For facilities using green and/or food waste, they should use negative aeration and treat the exhaust air with a bio-filtration system to help remove odorous compounds. The rules should limit the initial pile depth since deep piles are more difficult to aerate. These facilities should also keep a stock pile of wood chips on site. Covering a compost pile with moist wood chips can help to reduce odor emissions from the compost piles.

Facilities handling food waste should be required to have their reception facility and grinders enclosed in a building with a negative pressure system. The exhaust from the negative pressure system should be treated with a bio-filtration system.

Delivery trucks hauling food waste to the composting facilities should use enzyme based products that breaks down complex odor causing organic molecules, helping to reduce the odors leaving their trucks. Spraying the enzymes onto the compost during turning operations may also help to reduce the odor problems.

The Tulalip Reservation along with the Cities of Everett and Marysville have been struggling for over three years to solve the odor issues with the Cedar Grove operations in Everett. It is costing our communities a lot of time, money and effort to try to deal with the situation, without a good answer in sight. At this point, it looks like our communities are going to have to spend a lot more money to hire an independent contractor to do an odor study and take the issue to court. Cooperation between us and the permitting agencies has seen little to no progress to this point. We need to have better and enforceable rules and regulations that help to solve these issues. Currently, the individual neighboring residents and local governments impacted by the operations, are having to try to solve the issues themselves, because state and regional agencies with jurisdiction seem to be either unable to or unwilling to take meaningful actions to solve the local problems.

Making meaningful changes to the agency rules are desperately needed and long over due. The proposed rule changes are not sufficient for the health and welfare of neighboring communities. Please modify the proposed rules by adding requirements that are meaningful and protective of neighboring communities. Thank you for your consideration of these comments.

Sincerely yours,

Daryl Williams

Daryl Williams
Environmental Liaison

Appendix B: Transcripts from public hearings.

DEPARTMENT OF ECOLOGY

HEARING SUMMARY

M E M O R A N D U M

October 25, 2012

TO: Ted Sturdevant
Director

FROM: Sheila Hosner
Hearings Officer

SUBJECT: Rule-making Public Hearing Summary

WAC title: 173-350

Topic: Composting and Anaerobic Digestion Facilities

Program name: Waste 2 Resources

Name(s) of Ecology employee(s) at hearing: Kyle Dorsey, Dawn Marie Maurer, Peter Christiansen, Gary Bleeker, DouGlas Palenshus, Sheila Hosner (ORA)

Hearing location(s): Northwest Regional Office, 3190 160th AVE SE, Bellevue, WA

Total number of people at hearing(s): 29

Total number of testimonies: 1

Summary of Comments:
Please summarize the comments received at the public hearing. Describe if those in attendance were generally in favor of this agency action or opposed. If there were certain aspects of this agency action that satisfied or dissatisfied attendees, please explain.

One oral comment was received at this hearing. The speaker thanked Ecology staff for addressing evaporation and simplifying sampling procedures. She also expressed some concern over the need to have a professional engineer stamp operations plans and that changes to the rule seem to be focusing on product quality not public health.

There was a lot of general discussion in the question and answer period asking for clarification on the rule, but not a lot of opposition. Some concern was expressed about the definition of "Physical Contaminants" and what was included in that definition.

In general, I thought this hearing went well and the attendees had plenty of time to ask questions and discuss the new rule with Ecology staff.

cc: Polly Zehm
Laurie Davies
Bari Schreiner
Kyle Dorsey
Gary Bleeker
Dawn Marie Maurer

DEPARTMENT OF ECOLOGY
HEARING SUMMARY
M E M O R A N D U M

October 25, 2012

TO: Ted Sturdevant
Director

FROM: David Holland
Hearings Officer

SUBJECT: Rule-making Public Hearing Summary

WAC title: 173-350 Solid Waste Handling Standards

Topic: Composting and Anaerobic Digestion Facilities

Program name: Waste 2 Resources

Names of Ecology employees at hearing:

1. David Holland, Hearing Officer
2. Kyle Dorsey, Waste 2 Resources Program
3. Gary Bleeker, Waste 2 Resources Program
4. Dawn Marie Maurer, Waste 2 Resources Program
5. Darlene Frye, Waste 2 Resources Program Section Manager
6. Canming Xiao, Waste 2 Resources Program

Hearing location(s):

Central Regional Office
Dept. of Ecology
15 W. Yakima Ave.
Yakima, WA

Total number of people at hearing(s): 32 including Ecology staff

Total number of testimonies: 4

Summary of Comments:

There did not seem to be overwhelming support for the rule or significant opposition against it. The atmosphere was one of wanting clarity in understanding the rule, how the rule would be applied and coordinated with other Ecology programs and agencies.

Four individuals provided oral testimony. Two comments expressed concern that the rule was not adequately protective of human health. One comment clearly supported the rule. There were concerns about expectations for the permittees, lack of clarity in the regulations, and how the rule would be enforced. Additional comments reflected concerns about redundancy and coordination across agencies, programs and media (air, water, storm water). Some concerns were outside the scope of the rule.

cc:	Deputy Director:	Polly Zehm
	Program Manager:	Laurie Davies
	Rules Coordinator:	Bari Schreiner
	Waste 2 Resources:	Kyle Dorsey