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State of Washington

Preliminary Cost-Benefit and Least-Burdensome Alternative Analyses

Chapter 173-303 WAC

Dangerous Waste Regulations

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Preliminary Cost-Benefit and Least-Burdensome Alternative Analyses

Chapter 173-303 WAC Dangerous Waste Regulations

By

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Executive Summary

This report contains the economic analyses performed by the Washington State Department of Ecology to estimate the costs and benefits of the proposed amendments to the Dangerous Waste Regulation rule (Chapter 173-303 WAC). These analyses – the Cost-Benefit Analysis (CBA) and Least-Burdensome Alternative Analysis (LBA) – are based on the best available information at the time of publication. Ecology welcomes and encourages public comments that could improve the accuracy and precision of the analyses in this document.

The proposed rule amendments incorporate mandatory provisions that Ecology must adopt according to the underlying federal statutes, provisions provided by the United States Environmental Protection Agency (EPA) that Ecology chose to adopt, and proposed rule amendments initiated by Ecology.

The new federal provisions include alternative processes for managing dangerous waste at academic laboratories, the removal of saccharin from the lists of hazardous constituents and wastes, and alternative treatment standards for carbamate wastes.

Proposed amendments that impact state-only requirements include:

- Establishing a 30-day time limit for special waste accumulated at transfer stations.
- Clarifying appropriate test methods to designate halogenated organic compounds (HOCs).
- Clarifying facilities must use an “independent qualified registered professional engineer” for certifications.
- Allowing the use of enforceable documents in lieu of RCRA post closure permits.
- Provisions of the financial assurance section related to:
 - Determination of third party cost estimates
 - Use of net present value
 - Use of financial test and corporate guarantee options
 - Adjustments to tangible net worth
 - Use of agreed upon procedures
 - Minimum amounts for liability coverage
 - Establishing financial assurance corrective action guideline
- Removing section that is in conflict with Public Records Act (PRA).

After evaluating the probable costs and benefits of the proposed rule amendments, Ecology determines that the probable qualitative and quantitative benefits of the proposed rule amendments exceed the probable costs. The likely increase in compliance costs for generators and handlers of dangerous waste, over 20 years, is probably less than the benefits of cost savings and efficiency gains.

Chapter 1: Background and Introduction

1.1 Introduction

This report contains the economic analyses performed by the Washington State Department of Ecology (“Ecology”) to estimate the costs and benefits of the proposed rule amendments to the Hazardous Waste Regulations (Chapter 173-303 WAC). These analyses—the Cost-Benefit Analysis (CBA) and Least-Burdensome Alternative Analysis (LBA) are based on the best available information at the time of publication. Ecology welcomes and encourages public comments that could improve the accuracy and precision of the analyses in this document. In particular, Ecology is seeking further input on the premium estimates used in Section 3.6 (Financial Assurance) of this document.

The Washington Administrative Procedure Act (APA), RCW 34.05.328, requires Ecology to evaluate significant legislative rules to “determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the law being implemented.” Chapters 1 through 5 of this document describe our determination in regards to the proposed rule amendments to the Dangerous Waste Regulations rule (Chapter 173-303 WAC).

The APA also requires Ecology to “determine, after considering alternative versions of the rule...that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives” of the governing and authorizing statutes. Chapter 6 of this document describes that determination.

1.2 Dangerous waste management in Washington State

The regulations governing dangerous waste in Washington consist of requirements, rules, guidance, and other provisions from both federal and state laws. The Resource Conservation and Recovery Act (RCRA) is the primary federal law dealing with hazardous waste. The United States Environmental Protection Agency (EPA) is the primary federal agency responsible for the various provisions of RCRA. The primary set of rules related to hazardous waste is found in Title 40 (Protection of Environment) of the Code of Federal Regulations (CFR). In particular, 40 CFR Parts 260 through 279 concern hazardous waste. Before turning to the state rules and laws, it is important to note that Ecology uses the term dangerous waste rather than hazardous waste, except when explicitly referring to waste regulated under the federal program. Accordingly, we follow the same convention throughout the document.

At the state level, the authorizing statute for dangerous waste is Chapter 70.105 RCW. The Legislature conferred power to the Department of Ecology to implement the various rules, provide guidance, and enforce the various provisions in Washington. Ecology applied for and received authorization from the EPA to implement RCRA and the related portions of the Federal Code in the state of Washington. As a condition to receive authorization, Ecology must maintain consistency with federal laws and rules. Ecology incorporates the requirements of RCRA into state law Chapter 70.105 RCW. In addition, Ecology maintains an additional set of rules that are

unique to Washington State. Ecology adopts the federal and state-only requirements into a single chapter, Chapter 173-303 WAC, Dangerous Waste Regulations. Chapter 173-303 WAC provides Ecology with the ability to manage dangerous (hazardous) waste for the protection of the public and the environment.

Ecology operates a “risk-based” regime for dangerous waste management. If the waste poses more of a risk because of the amount or type, facilities face more stringent requirements. Generally speaking, the dangerous waste regulated community consists of three groups:

- Generators (entities that generate dangerous waste)
- Facilities that treat, store, and dispose (TSDFs) of dangerous waste
- Facilities that recycle dangerous waste

Federal and state rules impact each of these groups to varying degrees. Depending on the waste and process, requirements overlap for the groups significantly. Generators must follow established procedures to designate waste (determine if the waste is dangerous or not) and follow guidelines specific to each waste and waste stream. The designation of waste helps TSDFs and recyclers to comply with managing and handling requirements based on type of waste managed and handling procedures used. Depending on the type of management/handling procedure used, regulations might consider TSDFs a generator of another type of waste. All generators, TSDFs, and recyclers follow defined procedures when labeling and documenting handling procedures. In addition, each waste travels with a manifest document (or other acceptable documentation) that describes the waste in sufficient detail to allow the recipient to determine the correct procedures used to handle/treat the waste until the waste reaches its final destination.

1.3 Description of the proposed rule amendments

This section describes the proposed rule amendments that require analysis according to the APA. The package of amendments includes proposals to adopt federal rules that provide alternative mechanisms for dangerous waste management under RCRA, and proposals initiated by Ecology to amend state-only rules. The new federal provisions include proposals related to:

- Academic labs
 - Allowing eligible college and universities with laboratories to choose alternative process for managing laboratory waste on-site.
- Saccharin
 - Removing saccharin and its salts from list of dangerous constituents, wastes, and substances.
- Carbamate LDR
 - Providing facilities that handle carbamate wastes an alternative standard to use when treating carbamate wastes to meet land disposal restrictions (LDR) treatment standards.

In addition to the federal rules, Ecology proposed the following amendments that require analysis. Proposed amendments to the state-only requirements include:

- Special waste at transfer stations

- Establishing a 30-day time limit for special waste accumulated at solid waste transfer stations.
- Revise Chemical Test Methods (CTM) publication
 - Clarifying appropriate test methods to designate halogenated organic compounds (HOCs).
- Independent qualified registered professional engineer (IQRPE)
 - Clarifying that facilities must use an “independent qualified registered professional engineer” instead of a “qualified professional engineer” (or similar language) for certifications.
- Enforceable documents
 - Adopt federal rules that allow use of enforceable documents in lieu of RCRA post closure permits.
- Financial assurance:
 - 3rd party cost estimates
 - Ensuring that related corporate entities are not considered third parties for cost estimating purposes.
 - Net Present Value
 - Clarifying cost estimates for closure and post-closure financial assurance must be in current dollars, and net present value adjustments are not allowed.
 - Financial test
 - Clarifying the financial test and the corporate guarantee are two separate but related options.
 - Tangible net worth
 - Raising the minimum tangible net worth requirement from \$20 million to \$25 million to qualify for use of the financial test or corporate guarantee option.
 - Agreed upon procedures
 - Clarifying financial test and corporate guarantee provisions to allow submission of an “agreed upon procedures” report to fulfill the special report requirement.
 - Increase minimum financial assurance amounts
 - Adjusting the minimum liability coverage amounts.
 - Financial Assurance Corrective Action
 - Adding subsection for corrective action financial assurance.
- Public Disclosure
 - Delete WAC 173-303-905. The section is in conflict with Public Records Act (PRA).

The proposed rule amendments are described in greater detail in Chapter 2 of this document.

1.4 Reasons for the proposed amendments

The proposed amendments are necessary to maintain consistency with related regulations at the federal level. In addition, Ecology determined the proposed amendments to the state-only

requirements increase efficiency at an agency level which means better protection for people and the environment.

1.5 Document organization

The remainder of this document is organized in the following chapters:

- Chapter 2—Baseline and the proposed amendments: Description and comparison of the baseline (what would occur in the absence of the proposed rule) and the proposed rule requirements.
- Chapter 3—Probable costs of the proposed amendments: Analysis of the types and size of costs we expect impacted entities to incur as a result of the proposed rule.
- Chapter 4—Probable benefits of the proposed amendments: Analysis of the types and size of benefits we expect to result from the proposed rule.
- Chapter 5—Cost-benefit comparison and conclusions: Discussion of the complete implications of the CBA, and comments on the results.
- Chapter 6—Least-burdensome alternative analysis: Analysis of considered alternatives to the contents of the proposed rule.

Chapter 2: Baseline and the Proposed Rule Amendments

2.1 Introduction

In this chapter, we describe the baseline to which the proposed amendments are compared. The baseline is the regulatory context in the absence of the proposed rule being proposed, and its results.

We also describe, in this chapter, the proposed amendments and identify which requirements would likely result in costs or benefits (or both), and which requirements require analysis under the APA. Here, we address complexities in the scope of analysis, and indicate how costs and benefits are analyzed and discussed in chapters 3 and 4 of this document.

2.2 Baseline

The regulatory baseline for this analysis is the existing state rule: Dangerous Waste Regulations Chapter 173-303 WAC. This chapter consists of both federal provisions and state-only requirements. Ecology analyzed the elements of the proposed rule amendments that were different than the existing state rule. However, we did not analyze proposed amendments where the federal laws were incorporated without change into the chapter.

2.2.1 Federal laws and rules

The Resource Conservation and Recovery Act (RCRA) is the federal law that regulates hazardous waste at the federal level. RCRA gives EPA the authority to regulate hazardous waste from the "cradle-to-grave," which includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. In 1984, Congress adopted amendments to RCRA that focused on waste minimization, phasing out land disposal of hazardous waste, and corrective action procedures for releases of hazardous waste. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. The primary set of federal rules related to management of hazardous waste is found in Title 40 of the Code of Federal Regulations, Part 260 through Part 279.

EPA delegated enforcement of RCRA to Washington and other states that requested authorization. As a condition of delegated authority, the EPA requires states to incorporate certain provisions of the federal rules and laws in the state rule. In some situations, states must adopt certain of these mandatory provisions of the federal rule by reference with no ability to make proposed rule amendments. In other cases, the state might incorporate a variation of the federal rule as long as the state rule is as least as stringent as the federal rule.¹ Ecology has

¹ The Hazardous and Solid Waste Amendments (HSWA) to RCRA are considered "core" regulations to the RCRA program. When EPA promulgates a regulation under HSWA authority that is more stringent than existing federal requirements, that regulation takes effect in all authorized and unauthorized state at the same time. When EPA

incorporated mandatory provisions of RCRA as articulated in the federal rules found in Title 40 of the Code of Federal Regulations, into Chapter 173-303 WAC.

2.2.2 State laws and rules

The authorizing statute for the proposed rule is Chapter 70.105 RCW, Dangerous Waste Management. Chapter 70.105 RCW provides a comprehensive framework for the planning, regulation, control, and management of dangerous waste which helps prevent land, air, and water pollution while conserving natural, economic, and energy resources of the state. The statute provides for the prevention of problems related to improper management of hazardous wastes. Another purpose of the statute is to ensure that dangerous waste management facilities are operated safely, and sited to minimize harm to people and the environment. Another major goal of Chapter 70.105 RCW is to promote waste reduction and to encourage other improvements by generators in waste management practices. To accomplish these goals, the statute gives the Department of Ecology the authority to enact and enforce regulations relating to management of hazardous wastes and releases of hazardous substances. Ecology implements federal and state laws through Chapter 173-303 WAC, Dangerous Waste Regulations, which is the baseline for this analysis.

Chapter 173-303 includes the provisions of the federal rules required by RCRA for authorized states, certain federal provisions adopted by Ecology at its discretion, and provisions initiated by Ecology. Specifically, Chapter 173-303 includes provisions related to:

- Designation of dangerous waste
- Reporting of dangerous waste
- Treatment, storage, disposal, and recycling of dangerous waste
- Standards for closure and post-closure of facilities that handle dangerous waste
- Financial assurance requirements

Ecology considers Chapter 173-303 WAC the baseline for this analysis.

2.3 Analytic scope

The analysis considers only the probable costs and benefits of proposed rule amendments that differ from the current baseline and made at the discretion of Ecology based on the authorities granted to the agency by the Legislature and the EPA. In other words, we do not review all the proposed rule amendments.²

promulgates a regulation under non-HSWA authority, that regulation takes effect in an authorized state only when that the State adopts it and receives authorization for it. States are not required to adopt less stringent non-HSWA requirements but are expected to adopt those that are more stringent or broader in scope.

² See Cross Walk Appendix A for a list of proposed rule amendments. The crosswalk details the reasons why we included or excluded each proposed rule amendment in this analysis.

2.4 Analyzed requirements

In this analysis, we evaluated the following proposed rule amendments:

2.4.1 *Academic labs*

On December 1, 2008, the EPA finalized an alternative set of generator requirements applicable to laboratories owned by eligible academic entities (Vol. 73 Federal Register 72912). The federal provision addresses hazardous waste generation and accumulation in laboratories at colleges and universities, as well as other eligible academic entities formally affiliated with colleges and universities. Ecology is opting to adopt the provision with following additional requirements.

First, the proposed rule amendments add an additional labeling the requirement for laboratories to include the accumulation start date on the label of the waste accumulation container. The federal rule only requires that the accumulation start date be “associated” with the container (for example, recorded in a computer spreadsheet).

Second, Ecology proposes to add state-only unused commercial chemical products as eligible dangerous wastes that can be managed under the laboratory clean-out provisions. EPA’s final rule allows for unused commercial chemical products generated from lab clean-outs not to be counted toward generator status while managed on-site; the state rule extends this allowance to state-only unused commercial chemical products (dangerous waste).

Third, an adaptation requires small quantity generators, who notify Ecology of their participation in the program, to obtain EPA/state identification numbers, if they do not already have one. The federal provision does not have this requirement.

If the proposed rule amendments are adopted, eligible academic entities have the choice of managing their dangerous wastes in accordance with the new alternative regulations or remaining subject to the existing generator regulations.

The proposed amendment would not result in higher compliance costs when compared to the baseline. The proposed amendment would provide eligible entities the opportunity to adopt alternative methods of managing wastes generated in eligible labs. If the alternative mechanism is adopted, the eligible entity is likely to experience a reduction in compliance costs.

2.4.2 *Saccharin*

In January 2011, EPA removed U202 (saccharin and its salts) from the RCRA list of hazardous wastes, the RCRA list of hazardous constituents, and also from the list of hazardous substances under CERCLA.³ EPA decided to remove Saccharin based on a petition submitted to EPA to delist saccharin and its salts. In response EPA evaluated test data from the National Toxicology Program (NTP), from the International Agency for Research on Cancer (IARC), and from its own assessments on saccharin and its salts. Based on the review of this scientific information

³ The proposed federal rule became final on December 17, 2010 (78 Federal Register 78918).

EPA determined that saccharin and its salts do not pose a present or potential risk of causing toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms.

Ecology is proposing to adopt this federal provision by removing Saccharin and its salts from the U-listed dangerous waste (U202) in WAC 173-303-9903 and from the dangerous waste constituents list found in WAC 173-303-9905.

Ecology determined that this proposed rule amendment could reduce compliance costs. However, facilities in Washington do not process or handle considerable amounts of Saccharin and its salts. A review of the amount of saccharin reported to Ecology through the TurboWaste database, indicate that saccharin and its wastes are not currently a waste of concern and likely will not emerge as an issue. Assuming this pattern continues, Ecology does not anticipate the removal of U202 from the aforementioned lists having more than a marginal change in current business practices.

2.4.3 Carbamate LDR

In 1996, the EPA set numerical concentration based land disposal restriction (LDR) treatment limits for carbamate wastes. In addition, EPA added all carbamate waste constituents as Underlying Hazardous Constituents (UHC) in the LDR table of Universal Treatment Standards (UTS). Afterward, EPA confirmed that analytical standards were not readily available for many of the carbamate wastes. Essentially, firms were unable to document compliance with LDR treatment standards. In 2011, EPA provided alternative disposal techniques for carbamate waste and removing carbamate waste constituents as an underlying hazardous constituent in the LDR table of Universal Treatment Standards.⁴

The proposed rule amendment would allow the use of the best demonstrated available technologies (BDAT) for treating these wastes. Wastewater can be treated using combustion, chemical oxidation, biodegradation, or carbon adsorption. Non-wastewater can be treated by combustion. These would be legally permissible alternatives to the numeric concentration limits for carbamate constituents. In addition, this action would remove carbamate regulated constituents from the table of Universal Treatment Standards.

Ecology determined that this proposal could reduce compliance costs by offering generators and TSDF owner/operators flexibility related to the treatment of carbamate waste. However, generators and TSDF facilities do not report enough amount of carbamate waste in Washington to experience more than marginal cost savings. Accordingly, we do not anticipate generators and TSDFs to experience an appreciable reduction in compliance costs as a result of this proposed rule amendment.

⁴ On June 13, 2011, the EPA issued a Direct Final Rule (76 Federal Register 34147)

2.4.4 Special waste at transfer stations

Currently, no time limit exists for storage of special wastes passing through a solid waste transfer station. Special waste means any state-only dangerous waste that is solid only (nonliquid, nonaqueous, nongaseous), that is: corrosive waste, toxic waste, PCB waste, or persistent waste that is not extremely hazardous waste (WAC 173-303-040). Normal procedure is for generators to transfer special waste to a municipal solid waste landfill. However, entities have the option of taking advantage of a rule exemption for special waste and sending it to a transfer station before a solid waste facility. Approximately 147 transfer stations exist in Washington. In 2013, 11 generators sent 16,930,118 pounds of special waste to solid waste facilities. Because of special exemptions in the regulations, Ecology does not track the amount of special waste that passes through transfer stations.

The proposed rule amendments would establish a 30-day time limit for storage of special waste at transfer stations. A regulatory time limit helps reduce the potential for releases. However, the transfer station operator could apply to the local solid waste permitting agency for a time extension.

The proposed rule amendments could potentially increase costs for transfer stations. Since Ecology does not collect information on the amount of special waste that goes through transfer stations, we do not have the ability to estimate the potential increase in costs to transfer stations. However, if adopted, the proposed rule amendment might require transfer stations to move special waste to a final destination more frequently than in the past. More frequent trips to the final destination could increase costs and other expenses related to transporting special waste. The size of the transfer station (determines the capacity to store special waste), distance from a final facility, and price of fuel would influence the increase in costs.

2.4.5 Update chemical test methods for halogenated organic compounds (HOCs)

The proposed rule amendment clarifies appropriate test methods for designating a waste as persistent for halogenated organic compounds. The regulations require generators to designate a waste as dangerous if it is corrosive, reactive, ignitable, persistent, or toxic. Currently, the regulations allow facilities to use either generator knowledge of the production process or testing to designate waste streams. Because a wide range of HOCs could cause a waste to meet the criteria for persistence, Ecology provides guidance to generators concerning the acceptable testing methods for HOCs. Currently, the guidance provided by Ecology recommends that generators use a general testing method to determine if the waste stream contains HOCs, and then use a variety of different tests to determine the concentration of the different HOCs within the waste.

The EPA maintains a compendium of analytical and sampling methods that have received approval for use in complying with RCRA regulations. The document is titled Test Methods for Evaluating Solid Waste, Physical/Chemical Methods and is commonly referred by its EPA publication number, SW-846. Ecology maintains a similar document titled, Chemical Testing Methods for Designating Dangerous Waste, (Ecology publication #97-407). The Ecology

document provides recommendations and guidance for generators to use if the composition of a waste stream is unknown.

Guidance from Ecology currently recommends that generators use either SW-846 Method 9076 or Methods 5050 and 9056 to determine halide concentration for a general evaluation. Currently most generators start with Method 9076. If either Ecology or the generator decides the selected method does not work well, the generator would have to use additional tests to determine HOC concentrations.

The proposed rule amendments would simplify testing procedures by reducing the number of tests required to designate halogenated organic compounds (HOCs). Specifically, the proposed rule amendments, if adopted, recommends the use of a testing method (Method 9023) that is capable of determining HOC concentration without additional tests.

We anticipate the proposed rule amendments would create the opportunity for generators to reduce compliance costs. The proposed rule amendments allow the use of Method 9023, which is better able to determine halide concentration than Method 9076 or Methods 5050 and 9056. Using Method 9023 could reduce the likelihood that generators or Ecology have to use additional test methods, as well.

2.4.6 Independent Qualified Registered Professional Engineer (IQPRE)

The proposed rule amendments clarify that treatment, storage, and disposal facilities must use an “independent qualified registered professional engineer (IQPRE),” instead of a “qualified professional engineer” (or similar language) for certifications.⁵ Specifically, the proposed rule amendments would require the use of an independent professional engineer to certify:

- Staging piles
- Surface impoundments (dikes, liner systems, technical data)
- Waste piles (waste pile liners, containment systems)
- Land fill liners

EPA’s 2006 Burden Reduction Initiative Rule modified RCRA to allow use of non-independent or in-house professional engineers (PE) for certification purposes. However, the 2009 amendments to Chapter 173-303 WAC retained the requirement that independent professional engineers be used. With this proposed rule amendment, Ecology seeks to clarify that facilities use an independent professional engineer in almost all situations where professional engineer certifications are required. This change maintains consistency with other WAC 173-303 requirements where an independent professional engineer must be used.

We anticipate that this could increase costs on a per project basis. The treatment, storage, and disposal facilities in Washington don’t operate at a scale that would require frequent construction projects. In addition, the facilities already employ independent professional engineer to perform many certification functions. The proposed rule amendments would result in increased costs

⁵ For simplification, throughout the document, we drop “qualified” and “registered” from the term independent qualified registered professional engineer, and use the term “independent professional engineer.”

only to the extent that it might increase additional billable hours for existing independent professional engineer.

2.4.7 Enforceable documents

Currently, state and federal requirements dictate how owners/operators handle dangerous waste facilities during operation and after closure. The proposed rule amendments incorporate federal rules⁶ that allow the use of enforceable documents in lieu of RCRA post-closure permits. The proposed rule would allow interim status facilities to use Model Toxics Control Act (MTCA) enforceable documents, such as agreed orders, in place of a RCRA post closure permit.

Currently, Ecology has an agreement with EPA Region X where Ecology generally deferred decisions about post-closure permitting until after implementation of the Clean up Action Plan under MTCA. The arrangement with EPA Region X allowed Ecology to enjoy the flexibility provided by the use of the enforceable documents without encountering the limitations. That is, some interim facilities in WA have not yet had to go through the post closure permitting process. However, the arrangement with EPA Region X is no longer preferable to Ecology formally adopting the federal rule into Chapter 173-303 WAC and gaining authorization of the chapter from EPA to continue use of enforceable documents.

Potentially, the regulatory option of using an enforceable document in place of a RCRA post closure permit would eliminate the need for many facilities to apply for a post-closure permit. Accordingly, we anticipate that this change would likely reduce compliance costs in the future where an entity is able to avoid post-closure permits.

2.4.8 Financial assurance

Ecology is proposing numerous rule amendments to the financial assurance section of the dangerous waste regulations, WAC 173-303-620. Generally, the financial assurance regulations apply to facilities that treat, store, dispose, or recycle dangerous wastes. The financial assurance requirements dictate that facilities establish financial instruments that ensure the facilities have adequate financial resources to clean up and maintain facilities in the case of corrective action, closure, and post closure. The financial assurance provisions allow facilities to use one of the following mechanisms: a trust fund, a surety bond, letter of credit, insurance, financial test, or corporate guarantee. The financial assurance regulations dictate how facilities calculate the estimates for closure and post closure, which is the basis for determining the amount of financial assurance required for each facility.

In addition, the regulations establish minimum liability coverage amounts for treatment, storage, and disposal facilities and recycling facilities to compensate third parties in case of accidents. The liability coverage regulations dictate that treatment, storage, and disposal facilities and recycling facilities provide third-party liability coverage covering bodily injury and property damage for “sudden accidental occurrences” such as a fire or explosion. However, only those facilities that include land based waste management units (i.e., surface impoundments, landfills, land treatment units, some miscellaneous disposal units) are required to maintain equivalent

⁶ (63 Federal Register 204)

liability coverage for “non-sudden accidental occurrences,” such as a leaking underground tank. Facilities have the option to use any one of the instruments acceptable for financial assurance to demonstrate liability coverage. Facilities also have the option to combine sudden and non-sudden coverage in a single financial instrument if they are required to have both types of coverage.

The proposed rule amendments include the following provisions:

Third party estimates

The intent of the underlying regulation is to ensure that the facility’s cost estimate and the resulting financial assurance amount fully captures all costs that might be incurred for facility’s closure, post-closure, or corrective action activities. The purpose of the proposed rule amendment is to further ensure a true third-party cost by disallowing the use of cost estimates from sibling corporations and unrelated companies that share common owners.

We do not anticipate that this change would increase costs for facilities. Ecology already incorporates the majority of this proposed rule amendment into Agreed Orders and Consent Decrees for corrective action sites.

Net present value

The proposed rule amendment reiterates the requirement that facilities prepare cost estimates for closure and post-closure financial assurance based on current dollars and present estimates in current dollars rather than applying net present value calculations to the estimates prior to submittal.

The proposed rule amendment deals with the process used by facilities to estimate costs associated with closure and post-closure financial assurance. The current regulations require that facilities present estimates based on current dollars and without adjustment for inflation or other factors. However, due to perceived ambiguity in the state and federal regulations related to the term current dollars, facilities have submitted estimates after discounting the current dollar value. Ecology does not accept the use of discounting or other techniques that result in net present value derivations for financial assurance estimates because the adjustment would result in lower amounts set aside for closure and post closure situations.

Ecology does not anticipate that this change would increase compliance costs because the rule already requires the use of current dollars. In other words, Ecology is using its discretion to clarify the underlying federal and state regulations, which could reduce compliance costs by simplifying the closure process for facilities.⁷

Financial test

Currently, the dangerous waste rules provide facilities with the option to use a corporate guarantee or financial test to establish financial assurance for closure and post-closure of facilities. The proposed rule amendment would revise sections to clarify that the financial test and the corporate guarantee are two separate but related options. There are currently a number of

⁷ Calculating net present values requires the use of current dollars. Performing net present value calculations requires additional computations and analysis beyond what is necessary to provide estimates in current dollars.

places in the regulations that refer to the “financial test and corporate guarantee” option for financial assurance. The financial test option and corporate guarantee option are separate but related options. The regulations only require that entities submit documents for one option, not both. The proposed rule amendment seeks to eliminate possible confusion.

We do not anticipate that this change would result in costs or cost savings. The proposed rule amendment makes explicit that companies only have to submit documents for one option, not both.

Tangible net worth

The proposed rule amendment would raise the minimum tangible net worth requirement from \$20 million to \$25 million to qualify for use of the financial test or corporate guarantee options. The proposed rule amendment raises the tangible net worth requirement to keep pace with inflation as defined in the regulations.⁸ The proposed rule amendment only applies to those facilities that choose to use the corporate guarantee or financial test to provide financial assurance.

Ecology does not anticipate that this change would impact facilities that currently use the financial test or corporate guarantee option to provide financial assurance. Further, since the requirement to provide financial assurance generally only applies to treatment, storage, and disposal facilities or other facilities entering into closure or post closure, Ecology does not anticipate that this proposed change would have more than a marginal impact on any current or future facility. That is, Ecology believes that entry of a new facility that provides treatment, storage, or disposal facilities is unlikely given the requirements to site and operate such a facility.

However, in theory, this change has the potential to increase costs. For example, a facility chooses to use the financial test or guarantee option to avoid the cost of obtaining a financial instrument from a third-party, such as a bank. In theory, a firm with a current net worth of approximately \$20 million would lose the right to use a corporate guarantee or financial test unless the firm raises its net worth by \$5 million. Losing the ability to use the financial test or corporate guarantee could force the firm to incur costs to provide financial assurance.

Based on Ecology’s past experience, we don’t anticipate this proposed rule amendment to impact facilities currently in the financial assurance program or other potential firms because of the high likelihood that no facilities would enter the universe of treatment, storage, and disposal facilities in Washington.

Agreed upon procedures

Federal rules require a negative assurance financial report from a certified public accountant attesting to the accuracy of the financial documents. Due to CPA conduct rules, CPAs are no longer allowed to submit this type of report. The proposed rule amendment would enable facility owners/operators requesting the use of the financial test or corporate guarantee to submit an

⁸ WAC 173-303-620 dictates the use of an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product or Gross Domestic Product as published by the United States Department of Commerce. This information is provided by the United States Bureau of Economic Analysis (BEA) in the National Income and Product Accounts Tables.

“Agreed upon Procedures” report in place of a “negative assurance” report as required in federal regulations. The proposed rule amendments allow submittal of a type of financial report that is acceptable to EPA.

We consider this proposed rule amendment a procedural change that, from a practical perspective, reflects changes in financial reporting standards exogenous to the dangerous waste rules. In other words, conduct rules for CPAs do not allow the use of a negative financial assurance report. The proposed rule amendment merely provides facilities with an alternative that would meet the requirements established by the EPA. Accordingly, we do not anticipate that the proposed rule amendment would result in increased costs or cost savings.

Minimum liability coverage

The proposed rule amendment increases the amount of minimum liability coverage required for facilities. The proposed rule amendment increases:

- The minimum for “sudden accidental occurrences” from \$1 million to \$2.5 million per occurrence, with an annual aggregate of at least \$5 million (two accidents per year)
- The minimum for “non-sudden accidental occurrences” from \$3 million per occurrence, to \$7 million, with an annual aggregate of at least \$14 million (two accidents per year).

Presumably, the proposed rule amendments would increase the cost of meeting the minimum liability amount for facilities that use financial instruments such as a letter of credit, surety bond, trust fund, or insurance instead of using a self-insurance option.

Financial assurance corrective action

The proposed rule amendment establishes requirements for corrective action financial assurance. Currently, no federal or state financial assurance rules currently exist for corrective action sites. The proposed rule codifies existing EPA guidance and current Ecology practice as it is used in Agreed Orders and Consent Decrees.

The proposed rule incorporates standards used by Ecology in regards to agreed orders and consent decrees. Accordingly, we do not anticipate an increase in costs or cost savings.

2.4.9 Public disclosure

The proposed amendment would delete rule WAC 173-303-905. This rule is in conflict with the Public Records Act (PRA; RCW 34.05.328). The PRA rules say a public disclosure request must be responded to within 5 days, but does not require state agencies to furnish public records within a specified time frame. It is possible to interpret the current regulations to require Ecology to provide requesters with dangerous waste records within 20 working days. Also, Ecology may determine that the records do not have to be provided at all.

The proposed rule amendments would reduce potential legal and administrative costs to Ecology by reducing confusion as to the intent of the PRA. However, by deleting the conflicting WAC 173-303-905, it eliminates the chance Ecology must provide documents to the requester within 20 days.

Chapter 3: Probable Costs of the Proposed Rule Amendments

3.1 Introduction

Ecology estimated the expected costs associated with the proposed rule, as compared to the baseline described in section 2.2 of this document, and with impacts discussed in section 2.4 of this document. The baseline is what would happen in the absence of the proposed rule being adopted. The probable costs represent the dollar amount assigned to the change in behavior likely to result from the proposed amendments.

The costs analyzed here are associated with specific requirements and impacts falling into the following categories:

- Treatment/Storage/Disposal (Transfer stations)
- Independent Qualified Registered Professional Engineer
- Financial assurance

For the most part, the probable costs associated with this rule occur on an incidental or per project basis. For example, of the proposed rule amendments, we determined only three could increase costs for the regulated community. Of those three proposed rule amendments, only one, the proposed increase of minimums for financial assurance liability insurance, would result in an annual increase in costs. The impact of the other two proposed rule amendments would impact facilities on a situational basis.

3.2 Affected entities

The proposed amendments apply to generators and facilities that treat, store, dispose, and/or recycle dangerous waste in Washington State. Regulations stipulate that facilities report the type and amount of waste generated annually. Generators are classified into one of four groups by Ecology depending on the amount of waste generated each year. The largest monthly amount in a year determines the generator status for that year. The regulations define:

- A large quantity generator (LQG) as a facility that reports more than 2,200 lbs/month or have more than 2.2 lbs of acutely hazardous waste (AHW) or extremely hazardous waste (EHW)⁹;
- A medium quantity generator (MQG) as a facility that reports more than 220 but less than 2,200 pounds/month or have less than 2.2 pounds of AHW/EHW;
- A small quantity generator (SQG) as a facility that reports less than 220 pounds a month and less than 2.2 pounds (AHW/EHW).

The regulations require all LQG and MQG to notify Ecology of their existence and obtain an EPA/State RCRA Site ID number (specific to physical location, not business name). In addition,

⁹ Chapter 173-303-040 defines acutely hazardous waste as specific waste sources and discarded chemical products that begin with “P” (Chapter 173-303-9903). Chapter 173-303-100 (5)(c) (ii) defines an extremely hazardous waste as a waste that exceeds established bioassay limits.

the MQG/LQG report the amount of waste generated each year to Ecology via the TurboWaste reporting system. The regulations do not require SQGs to obtain a RCRA Site ID but waste disposal companies might require a Site ID before accepting waste. In sum, each year LQGs, MQGs, and a portion of the SQGs report the amount of waste generated for each Site ID to Ecology through the TurboWaste system.

The dangerous waste regulations require extensive record keeping, which enables Ecology to identify the entities that report generating or handling specific wastes. We utilized data from Ecology’s TurboWaste database to help define the number of entities and amount of waste impacted by the proposed rule amendments. Because the dangerous waste regulations provide exclusions and exemptions for small quantity generators the information contained in the queries, and presented here, does not represent the entire universe of generators or handlers, only those that report the information to either Ecology or the EPA.

The table details the total number of generators, amount of waste, and number of treatment, storage, and disposal facilities reported to Ecology via TurboWaste to Ecology. It is important to note that the figures reported to TurboWaste likely understate the number of generators and reported waste because the regulations do not require small quantity generators to consistently report to Ecology.

Table 1: Overview of regulated community

Year	Generators	Reported Waste (lbs)	TSD facilities
1995	2,393	13,865,558,026	28
1996	1888	14,729,345,475	25
1997	1749	16,782,086,974	23
1998	1606	1,005,103,058	15
1999	1506	525,118,347	21
2000	1360	491,287,639	21
2001	1293	425,219,538	17
2002	1219	338,677,502	15
2003	1148	260,376,335	15
2004	1193	377,945,661	14
2005	1225	361,477,925	13
2006	1220	282,465,134	13
2007	1224	427,270,631	14
2008	1348	367,221,781	14
2009	1197	709,207,119	11
2010	1154	635,286,886	13
2011	1160	757,806,610	12
2012	1203	613,829,686	12
2013	1178	600,019,298	12

The table demonstrates that since 1995, the number of generators reporting waste Ecology considers dangerous has declined by approximately 51%. The amount of dangerous waste reported has declined by approximately 96% since 1995. The number of treatment, storage, and disposal facilities has declined by approximately 57% since 1995.

The decline in number of generators, amount of waste reported, and number of treatment, storage, and disposal facilities reflects, in part, the evolution of regulations, especially in regards to reporting requirements. That is, the underlying regulations have changed and now reflect different reporting requirements than in 1995. However, the change in reporting requirements is not sufficient to explain the entire drop in total number of generators, amount of waste reported, and number of treatment, storage, and disposal facilities.

The average annual percent change in number of generators, amount of waste reported, and treatment, storage, and disposal facilities is negative (3.6 percent, 2.7 percent, and 3.4 percent respectively). While the magnitude of the annual percentage change is not large, the figures reported to Ecology suggest that regulated community of generators and treatment, storage, and disposal facilities continues to vary but in a general downward direction. That is, the regulated community appears stable for the last several years but continues a downward trend since 1995.

Since the dangerous waste regulations create a cradle to grave system, the impact of the proposed rule amendments fall to the specific entities that generate or handle a particular waste. Accordingly, while Table 1 includes information on the broader universe of generators and treatment, storage, and disposal facilities, we used the TurboWaste database and other sources where appropriate to determine how many of the reported facilities each of the proposed rule amendment could impact. We report those figures in each section.

We determined three proposed rule amendments are likely to increase costs. The costs arising from these proposed rule amendments impact different parts of the regulated community.

- The time limit on storing special waste at transfer stations impacts those transfer stations that accept special waste.
- The requirement to use an independent professional engineer for certification impacts treatment, storage, disposal facilities.
- The proposed rule amendments to increase minimum financial assurance amounts only impacts treatment, storage, disposal and dangerous waste recycling facilities that do not use a financial test or corporate guarantee as financial assurance.

We discuss each of proposed rule amendments and the probable costs below. In an abundance of caution, we present the most conservatively large estimate of costs (worst case scenario).

3.3 Discounting and present values

We use a discount rate to convert future costs and benefits to present values, to represent and be able to compare total future value streams.

Typically, we use an average historic discount rate based on the rate of return on US Treasury I-Bonds, as these rates are both risk-free and adjusted for inflation. The current discount rate used for these calculations is 1.32 percent, based on I-Bond rates between September 1998 and June 2014.

3.4 Treatment/Storage/Disposal (Transfer Stations)

Special wastes at transfer stations

The costs associated with the establishment of a 30-day limit for special wastes at transfer stations would accrue to transfer stations. The proposed rule amendments could increase transportation costs for transfer stations that currently store special waste longer than 30 days. The exact cost would depend on the size of the transfer station, distance from a final destination such as a solid waste facility, and cost of fuel.¹⁰

At this time, we do not have access to information that would enable us to estimate the potential cost of the 30-day limit on transfer stations. Generators typically send special waste to final disposal facilities such as a municipal solid waste landfill. However, a provision of the dangerous waste regulations allows the generators to send the special waste to a transfer station prior to the final destination.¹¹

Approximately 147 transfer stations operate in Washington.¹² In 2013, 11 generators reported 16,930,118 pounds of special waste to Ecology via the TurboWaste reporting database. Because of special exemptions related to transfer stations and special waste, we do not know how much of the 16,930,118 pounds of special waste went through the transfer stations. We also do not have estimates for the average length of time that special waste stays at transfer stations. Due to the specific definition of special waste used by Ecology, we could not find a suitable proxy in the existing literature. Accordingly, it is difficult to determine how many of the transfer stations the proposed rule amendments would impact (how many actually store special waste) or to what extent the change would impact operations (how much the transfer stations store or how long the special waste is kept).

In theory, though, transfer stations that currently accumulate special waste for longer than 30 days before taking it to the solid waste landfill could experience an increase in transportation costs due to the increased frequency of trips to the final destination. The cost increase would arise from the additional number of times the transfer stations must transport the special waste to final facilities.

Despite the lack of information related to this change, we do feel confident that Ecology has incorporated enough flexibility into the proposed rule amendments to help transfer stations adapt

¹⁰ The size of the transfer station would determine the amount of special waste that transfer stations can store for any length of time.

¹¹ Chapter 173-303-073 (2) (e) (i-v) WAC list the requirements for transfer stations to accept special waste. The transfer stations must make specific provisions to receive special waste that are reflected in the operating plan for the transfer station. In addition, the transfer stations must receive approval from the local solid waste permitting authority.

¹² According to the Waste 2 Resources program in Ecology which maintains a database concerning transfer stations.

to the change. In particular, the proposed amendment enables transfer stations to apply for an exemption to the 30-day limit. Currently, transfer stations must apply for a permit from the local solid waste permitting authority in order to accept special waste. The cost of the permit to accept special waste varies according to the local regulations concerning solid waste. During the application or renewal process for the local permit to accept special wastes, facilities would have the option to request an exemption from the 30-day time limit on special wastes, if necessary. The permitting process for local solid waste facilities is much less cumbersome than other permitting processes found within the dangerous waste regulations. Ecology anticipates that asking for an exemption, in and of itself, would not increase compliance costs because of the existing permitting processes used by the local authorities.

3.5 Compliance costs

Independent Qualified Registered Professional Engineer (IQRPE)

The cost of hiring an independent professional engineer depends on the scale and frequency of specific construction projects at treatment, storage, and disposal facilities (TSDFs). Currently, Ecology estimates that 13 treatment, storage, and disposal facilities operate in Washington, which reflects the number of TSDFs that operate in Washington (RCRA Info 2014). Given the existing regulations regarding location of potential facilities, permitting requirements, and other rules, Ecology considers it highly unlikely that any new TSDFs might begin operation in Washington over the next 20 years.¹³

As mentioned in section 2.4.6, the dangerous waste regulations in Washington already require facilities to use independent professional engineers for numerous certification tasks. Further, the regulations already require a professional engineer to certify the various projects mentioned in the proposed rule amendments. Accordingly, the proposed rule amendment would not necessarily create new work for existing professional engineers. Rather, the proposed rule amendment would result in a transfer of costs associated with certification from the engineer employed by the facility to an independent professional engineer.

Ecology anticipates that because of the existing requirement to use independent professional engineer for numerous certification activities, facilities likely already have a contract with an independent professional engineer. Accordingly, the increase in compliance costs would depend, in part, on the difference between the salary a company pays the professional engineer and the fee the facility would pay an independent professional engineer. Because the proposed rule amendment does not require additional tasks for the existing professional engineer, we measure the potential increase in compliance costs by focusing on the potential increase in the number of billable hours for the independent professional engineer.

The proposed rule amendments would add to the list of procedures that require certification by an independent professional engineer. The likely increase in billable hours would depend on the

¹³ The number of TSDFs that report to TurboWaste (Table 1 above) and the number of TSDFs, as indicated by NAICS code 562211 (hazardous waste treatment and disposal), that report income to the Washington State Department of Revenue, confirm that, if anything, the number of operating TSDFs facilities is declining somewhat not expanding. Accordingly, we do not forecast that the proposed rule amendments would impact any other facilities than those that already exist in Washington.

scope and the frequency of projects that fall under the proposed rule amendments. In other words, the cost of this proposed rule amendment ultimately depends on the investment/maintenance/operation decisions made by the TSDFs.

Ecology estimated a range that describes the number hours that TSDFs might spend on the certification of the various tasks proposed in the rule amendments. The range includes an estimate of 15 hours for more basic projects (staging piles) to 100 hours to certify more complex projects (landfill).¹⁴ Again, it is important to note that, as the regulations currently read, the facilities already need a professional engineer to certify the construction projects. We assume that TSD facilities pay professional engineers on staff a salary, which includes adjustments for overhead such as benefits. If the professional engineer employed by the facility is able to perform the certification duties, the proposed rule amendments would increase costs only to the extent that an independent professional engineer costs more than a professional engineer.

To determine an estimate of the rate paid to professional engineers, we averaged the wages of five engineers that could perform the certification of projects as listed in the proposed rule amendments. We used wages for chemical, civil, environmental, industrial, and “all other” engineers from the United States Bureau of Labor Statistics (BLS), May 2013 State Occupational Employment and Wage Estimates for Washington (2014). The maximum hourly wage was \$47. The BLS (2014c) estimates that benefits account for 30.4 percent in the Pacific region. Accordingly, the average wage of a professional engineer including benefits totals approximately \$61.

Given Ecology’s experience working with independent professional engineers, Ecology estimates that an average rate charged for certification might reach \$140 per hour on average, which includes overhead.¹⁵ At the upper limit, the difference between the salary paid professional engineers who are employees and the rate paid independent professional engineers could reach \$80 per hour. Multiplying by 100 hours (the estimated upper limit of time required for certification tasks for the TSDF operating universe), the annual difference between what facilities would pay a professional engineer who is an employee and an independent professional engineer could reach \$8,000 a year. The total estimated cost for all thirteen facilities could reach \$104,000 annually, which Ecology considers a conservative estimate. In other words, Ecology acknowledges that, on average, each facility would not engage in a project that takes 100 hours to complete each year. However, at this time, Ecology does not know how frequently facilities would need to do these types of projects. Accordingly, we take a conservative approach.

In sum, Ecology estimates that this proposed rule amendment could increase costs to the TSDFs operating in Washington by \$104,000 annually over the next 20 years. The net present value of an annual cost of \$104,000 at a discount rate of 1.32 percent for 20 years is \$1,817,627, which represents the total cost that could accrue to the TSDFs in Washington if the proposed rule amendment is adopted.

¹⁴ Estimate based on discussions and estimates made in conjunction with professional engineers on staff at the Department of Ecology.

¹⁵ We consider this high end estimate based on the experience of various professional engineers in Ecology working with their counterparts in the industry.

3.6 Financial assurance

Increase minimum liability amounts

The proposed rule amendment to increase minimum liability coverage amounts could increase the cost of compliance for TSDFs and dangerous waste recycling facilities. Generally, financial assurance minimum liability requirements apply to operating treatment, storage, and disposal facilities and dangerous waste recycling facilities. Currently, 22 facilities must demonstrate minimum liability coverage. Of those, four facilities use the financial test or corporate guarantee option and 18 facilities use liability insurance. The proposed rule amendments would not impact facilities that use the financial test or corporate guarantee option. Ecology anticipates that those facilities that use an insurance policy to demonstrate liability coverage could experience an increase in compliance costs due to the increase in minimum liability amounts.

Because the financial assurance requirements only apply to active treatment, storage, and disposal facilities and dangerous waste recycling facilities, Ecology does not anticipate that any new facilities would require financial assurance. That is, given the current regulatory environment, it is unlikely that any new TSDFs would locate in Washington. Additionally, the current recycling market appears to be stable and Ecology does not currently anticipate any new dangerous waste recyclers will enter the market. Ecology also feels confident that the firms that use a financial test or corporate guarantee would continue to do so over the time horizon in this analysis. It is possible that a currently active TSDF site or recycler could transition to closure or post-closure status in the next 20 years, which would reduce compliance costs. Since the transition to closure and post-closure program is generally a negotiated process, we do not feel confident forecasting when, if at all, a facility might transition to closure/post-closure status.

Presumably, increasing the face value of an insurance policy used to provide minimum liability coverage could increase the cost of using insurance. The cost of insurance depends on the specific wastes handled at a location, location of the facility, the proximity and condition of the surrounding buildings, the financial standing of the insured, and the insurance company. Unfortunately, Ecology does not have access to all of the policy documents needed to determine the term, details, and premiums that the facilities pay for insurance to meet financial assurance. Accordingly, we contacted several local brokers, financial assurance officers in other states, consulted marketing information from leading providers of environmental insurance, and consulted three studies concerning environmental insurance (Yount and Meyer, 2005a, 2005b, 2006).

Ecology considers it reasonable to assume that increasing the minimum financial assurance amounts for sudden accidental occurrences could increase premiums by \$5,000 annually and increasing the amount of financial assurance for combined sudden occurrence and non-sudden accidental occurrences accidents could cost \$10,000. Ecology is seeking, and encourages, further comment and input to improve or verify these values during the public comment period.

Of the 18 facilities that use insurance to meet their obligation, four provide policies in excess of the current minimums. Of the remaining facilities, Ecology anticipates that as many as 14 might need to purchase additional sudden accidental coverage at an estimated cost of \$5,000. Ecology estimates that seven facilities that require non-sudden coverage would choose to self insure, and

thus incur a zero incremental cost instead of \$10,000. Accordingly, we estimate that the proposed rule amendment could increase compliance costs for the impacted facilities by \$70,000 annually.

In addition to information about insurance premiums, we also considered the price of alternative mechanisms that a facility in need of financial assurance might consider instead of insurance. From discussions with past and present facilities in the financial assurance program and regulators at EPA and in other states, Ecology also understands that the cost of surety bonds is frequently similar to those for insurance. The remaining options available under the regulations are obtaining a letter of credit from a bank or creating a trust fund with a bank or other acceptable trustee. Both of these options would likely be far more expensive than either an insurance policy or a surety bond. Therefore, we do not anticipate any business will elect to use either of these options.

In sum, Ecology estimates that, if adopted, the proposed rule amendment could increase costs to facilities using liability insurance to provide sudden accidental occurrence financial assurance by \$70,000 annually over the next 20 years. The net present value of \$70,000 annually at a discount rate of 1.32 percent for 20 years is \$1,223,403, which represents the total cost that could accrue to Washington facilities if the proposed rule amendment is adopted.

Combined costs

Table 2 below provides a review of the costs we anticipate could occur. Again, we opted for caution and used the higher end estimates for costs. We also assume that facilities proceed with some type of activity that requires certification from an IQPRE each year. We don't think it is probable that all fourteen entities engage in activities that require an IQPRE.

Table 2: Probable costs

Proposed Rule Amendments	Annual Costs	NPV (1.32%, 20 yrs)
Transfer Stations	\$Unknown	\$Unknown
IQPRE	\$104,000	\$1,817,627
Financial Assurance	\$70,000	\$1,223,403
TOTAL	\$174,000	\$3,041,030

Our analysis suggests that the proposed rule amendments could result in additional costs of approximately \$174,000 annually. Again, though, we emphasize that these costs do not apply to the same sectors of the regulated community. The probable costs from the proposed rule amendment regarding special waste would accrue to transfer stations. We reiterate that we do not have a suitable estimate or proxy to gauge the potential increase in transportation costs for transfer stations. However, the proposed rule amendment provides flexibility for transfer stations that would like to store special waste for more than 30 days. In addition, the regulations do not require generators to use transfer stations to store special waste. Accordingly, the increased costs associated with this proposed rule amendment would accrue on a situational basis.

The probable costs of the proposed amendment to use independent professional engineers would accrue to treatment, storage, and treatment facilities, as would the probable costs of increased liability requirements. However, it is not obvious that the TSDFs that decide to engage in a project that requires an independent professional engineer also use insurance to provide minimum liability coverage.

In short, it is our determination that while the costs might accrue to the general regulated community, as a whole, we do not assume that the regulated community would absorb the costs in a similar manner or change behavior in a uniform manner.

Chapter 4: Probable Benefits of the Proposed Rule Amendments

4.1 Introduction

Ecology estimated the probable benefits associated with the proposed amendments, as compared to the baseline described in section 2.2 of this document, and with impacts discussed in section 2.4 of this document. The baseline is what would happen in the absence of the proposed rule being adopted. The benefits analyzed here are associated with:

- Reduced compliance costs
- Efficiency gains

It is important to note that we consider cost savings that arise from the proposed rule amendments as a benefit. Accordingly, the following section discusses the specific areas where we anticipate that cost savings might occur. We also discuss qualitatively the benefits associated with efficiency gains.

As with the costs, the cost savings tend to flow to specific segments of the regulated community addressed by the specific rules.

4.2 Reduced compliance costs

4.2.1 Academic Labs

The Academic Lab amendment gives eligible entities the opportunity to reduce compliance costs by opting to abide by the alternative set of generator guidelines. The proposed rule amendment would enable eligible entities to:

- Reduce transportation costs to disposal facilities,
- Reduce transportation on campus, and
- Protect students and staff from unnecessary risks due to accumulated waste.

The amount of savings depends on the amount and type of wastes generated at the eligible entity, the mode of transportation, and fuel costs.

In 2008, the EPA published a cost benefit analysis of the potential cost savings that eligible units might accrue. The EPA (2008) estimated an average annual cost savings of \$3,540, which translates into \$3,911 in 2014\$.¹⁶

Ecology estimates that of the 129 academic institutions in the state, all 129 could have eligible labs.¹⁷ We do not find it reasonable to offer a forecast regarding the potential of additional

¹⁶ United States Bureau of Labor Statistics. 2014. Consumer Price Index Calculator.

¹⁷ <http://www.wsac.wa.gov/colleges-and-institutions-washington>

entities that could apply for the alternative standards. That is, in order to forecast an increase in the number of entities that could use the alternative, we would have to assume not only that new academic institutions would move into Washington but also that these institutions would operate eligible labs and that these labs would want to use the alternative standards. Given that academic institutions rarely, if ever, respond to market signals in a predictable manner, we do not find those assumptions reasonable. Assuming that all 129 academic institutions would have an eligible lab is the upper bound of the regulated community impacted by this proposed rule amendment.

Table 3: Potential academic entities

Type of Institution	Number in Washington
Community and technical colleges	34
Public baccalaureate granting colleges and universities	6
Exempt and Independent Colleges	33
Authorized Institutions	56
TOTAL	129

If the proposed rule amendment is adopted and all 129 potentially eligible entities realize the average annual cost savings of \$3,911, the 129 units could save up to \$504,519 annually. The net present value of \$504,519 annually at a discount rate of 1.32 percent for 20 years is \$8,817,572, which represents the total cost savings that could accrue to the facilities impacted by the proposed rule amendment.

4.2.2 Halogenated organic compounds (HOCs) test methods

The proposed rule amendment to simplify testing methods for HOCs has the potential to reduce compliance costs for those generators that do not know the HOC content of a waste stream. If the proposed rule amendment is adopted, the cost savings would accrue to generators that don't know the HOC content of a waste.

When a waste stream contains one of more HOCs, generators must determine the total HOC concentration by summing the concentration for all HOCs for which the concentration is known. Ecology acknowledges that no single analytical method clearly defines all potential HOCs regulated in Washington State. Accordingly, the proposed rule amendment is an attempt to simplify the process of designating HOCs by offering new methods of testing.

Currently, generators either use accumulated knowledge (previous test results for waste streams) or approved test methods as listed in "Chemical Test Methods for Designating Dangerous Waste" to designate waste streams. Currently, the regulations suggest that generators use a Method 9076, and a combination of other tests such as Method 8260 and 8270. Estimates

suggest that a generator using Methods 9076, 8260, and 8270 could experience lab costs of \$595.¹⁸

Table 4: Examples of testing costs

Method	Estimated Cost
9076	\$45
8260	\$200
8270	\$350

The proposed rule amendment simplifies testing and reduces compliance costs by allowing use of one test, Method 9023, as opposed to a combination of tests. The estimated cost of Method 9023 is \$45. Allowing the use of Method 9023 would result in a cost savings of \$550 per testing event.

The regulations do not require testing every time a waste is produced if the generator knows what the waste contains. Further, the regulations do not require the generators to report which method was used to determine HOC concentrations. Accordingly, we do not have access to data that would allow Ecology to determine the number of testing events each year that would enable generators to experience a cost savings. Accordingly, we looked at the number of waste streams that contain HOCs reported to Ecology. In 2013, 753 generators reported HOC waste streams to Ecology via TurboWaste. Since 1995, on average, 702 generators reported HOC waste streams each year. Ecology does not consider it likely that all of the generators that report waste streams actually test for HOC concentrations. Some generators use product knowledge, previous test results, material data sheets, and other information to designate HOCs. Ecology estimates that as many as 50% of the generators actually test the waste streams for HOC concentrations. Accordingly, as a conservative estimate, we use 50% of the average number of HOC waste streams reported to Ecology, and assume all 351 generators tested for the HOCs prior to reporting to TurboWaste.

To calculate the total cost savings from this proposed rule amendment, if adopted, we multiply the amount saved by using Method 9023 by 351, which results in potential cost savings of \$193,050 annually. Since we do not know which generators actually test for HOCs, we attribute the \$193,050 in annual savings to all generators. The net present value of \$193,050 annually at a discount rate of 1.32 percent for 20 years is \$3,373,971 which represents the total cost savings that could accrue to the facilities impacted by the proposed rule amendment.

4.2.3 Enforceable documents

We anticipate that the proposed rule amendment to allow the use of enforceable documents rather than a post closure permit would result in cost savings arising from the reduction of time required to submit necessary documents. The cost savings would accrue to treatment, storage, or disposal facilities that plan to close and must establish plans for post closure. Currently, this is a negotiated process between facilities, Ecology, and the EPA.

¹⁸ Spectra Laboratories (Tacoma, Washington) price list

Under the proposed rule amendment, a facility would choose whether to use a post closure permit process or an enforceable document when determining post closure plans. Both choices require extensive initial time and resources to complete on the part of Ecology and the facility. However, Ecology anticipates, the use of enforceable documents initially would require fewer hours for facilities and the agency. However, since the regulations do not require the use of enforceable documents or post closure permits currently for interim status facilities, we do not have data to base estimates on prior experience. We assume that the use of enforceable documents means that facilities would not have to reapply for a post closure permit. The post closure permit lasts for 10 years. Accordingly, we estimate potential cost savings based on projected savings from not having to reapply for a post closure permit in years 10 and 20 after the decision to use enforceable documents.

Ecology considers the post closure permitting process a subset of the final permitting process. Discussions with permitting staff in Ecology and informal discussions with consultants in Washington that perform permitting work for dangerous waste facilities suggest that the permitting process could take as many as 640 hours and involve numerous staff from the entity applying for the permit. Accordingly, using the enforceable documents might save each facility 640 hours in years 10 and 20. The 640 hours represents the combined efforts of managerial, technical, and administrative personnel. We consider an average hourly wage of \$100, including overhead, as a reasonable estimate. Using these assumptions, we arrive at a cost of \$64,000 for each facility to reapply for a permit in year 10 and 20. Assuming that all ten facilities would accrue these cost savings results in the total cost savings for the regulated community of reach \$640,000 annually beginning in year 10.

Washington has as many as ten facilities that could decide to use the enforceable documents option rather than applying for a post closure permit. Using the high end of this range, over the next ten years, we anticipate that, on average, at least one site would need to decide whether to use enforceable documents or the post closure permitting process per year. If this assumption holds, each entity that chooses to use the enforceable document would experience an initial savings from the reduced work load associated with the enforceable documents. While we do not have data or a similar process to use a proxy to determine the initial cost savings from using an enforceable document, we assume the cost savings is positive and more than a minor cost savings. In addition to the initial savings, facilities would accrue savings of \$640,000 in year 10 and year 20 after using the enforceable document.

Since we do not have a reasonable basis to gauge the initial cost savings of using enforceable documents and the time horizon for this analysis is only 20 years, we calculated the net present value of the potential cost savings from this proposed rule amendment assuming that facilities do not realize cost savings until 10 years after the use of the enforceable document. We used cost savings in year 10-20 of the analysis to determine the net present value of the cost savings if this proposed rule amendment is adopted, which is \$5,787,864. The NPV calculation does not include the anticipated initial savings from using the enforceable document. In addition, the NPV calculation does not account for the savings from avoiding the renewal of the post closure permit in year 20 for each firm. Accordingly, we consider the NPV calculation as understating the potential costs savings of this rule proposal.

4.3 Combined cost savings

While we feel that the estimated costs presented in the analysis likely overstate the costs, we feel that the estimates of the cost savings likely understate potential savings.

Table 5: Probable cost savings

Proposed Rule Amendment	Annual cost savings	NPV (1.32%, 20 years)
Academic Lab	\$504,519	\$8,817,572
HOC Testing Method	\$193,050	\$3,373,971
Enforceable Documents	\$640,000 starting in year 10	\$5,787,864
TOTAL	\$697,569 (YR1-10) \$1,337,569 (YR11-20)	\$17,979,407

As demonstrated in the table, Ecology anticipates that the probable cost savings could total \$697,569. In year 10-20 of the analysis the firms start to enjoy cost savings from using the enforceable documents, which could increase the annual cost savings to \$1,337,569 in years 11-20.

4.4 Efficiency gains

The majority of the qualitative benefits would arise from efficiency gains the proposed rule amendments would bring about. The proposed rule amendments help ensure that the cradle-to-grave system of regulations for dangerous wastes remains vibrant in Washington. The proposed rules amendments help ensure the baseline regulatory levels remain as stringent as before but in a manner that reduces compliance costs. In other words, the proposed rule amendments provide a similar level of protection as before but in a more cost effective manner for both Ecology and the regulated community.

In particular, the proposed amendments to the financial assurance program, as a whole, would likely result in a more efficient and effective regulatory regime. The proposed amendments would save staff and those entities involved with financial assurance time and resources. For example, prohibiting the use of net present value for financial assurance estimates reduces the likelihood that staff or applicants would spend time preparing or processing documents with ineligible calculations. Clarifying that companies must only submit a financial test or a corporate guarantee reduces the likelihood that companies would duplicate effort. While we do not have specific data related to the amount of time and resources saved by the proposed rule amendments to the financial assurance program, we feel confident that the proposed rule amendments would improve efficiency of program delivery on the part of Ecology and reduce the amount of work necessary to comply with financial assurance requirements.

While we don't have the ability to quantify the benefits associated with more efficient and effective regulations, we feel confident that when combined with the probable cost savings, benefits far exceed the probable costs.

Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Probable costs and benefits of the proposed rule

Ecology estimated the following ranges of costs and benefits of the proposed amendments.

5.2 Estimated costs

As described in chapter 3, Ecology estimated the following costs associated with the proposed rule amendments. We present both the annual costs to the regulated community and the net present value of the costs over 20 years. As explained above, we do not have data to make a reasonable quantitative estimate on the probable costs.

Table 6: Probable costs

Proposed Rule Amendments	Annual Costs	NPV (1.32%, 20 yrs)
Transfer Stations	\$Unknown	\$Unknown
IQPRE	\$104,000	\$1,817,627
Financial Assurance	\$70,000	\$1,223,403
TOTAL	\$174,000	\$3,041,030

If the proposed rule amendments are adopted, the quantifiable annual increase in compliance costs could reach \$174,000. The net present value of the costs total \$3,041,030. In addition, transfer stations that handle special waste could experience an increase in compliance costs from the establishment of time limit to store special waste. As mentioned above, the regulations do not require the reporting of data that would enable us to determine how much special waste goes through transfer stations or how long it currently stays at transfer stations. Accordingly, we do not have the ability to make a quantifiable estimate for inclusion in the above chart.

5.3 Estimated benefits

As described in Chapter Four, Ecology estimated the following cost savings associated with the proposed rule amendments. We present both the annual cost savings to the regulated community and the net present value of the costs over 20 years.

Table 7: Probable cost savings

Proposed Rule Amendment	Annual cost savings	NPV (1.32%, 20 years)
Academic Lab	\$504,519	\$8,817,572
HOC Testing Method	\$193,050	\$3,373,971
Enforceable Documents	\$640,000 starting in year 10	\$5,787,864
TOTAL	\$697,569 (YR1-10) \$1,337,569 (YR11-20)	\$17,979,407

In addition to the quantifiable cost savings mentioned in Table 7, it is likely that Ecology as well as the regulated community would benefit from efficiency gains that arise from the amendments included in this package. For example, it is likely that the amendments to the financial section of the rules, if adopted, would save time and resources necessary to comply with the various provisions of the laws and rules.

5.4 Conclusion

After evaluating the probable costs and benefits of the proposed rule, Ecology determines that the probable qualitative and quantitative benefits of the rule exceed the probable costs. The proposed rule amendments would likely result in more cost savings than costs, which by itself suggests that benefits exceed costs. Taking into account the qualitative benefits associated with efficiency gains ensures that the benefits exceed the costs.

Chapter 6: Least-Burdensome Alternative Analysis

6.1 Introduction

Chapter 34.05.328(1)(e) requires Ecology to “...[d]etermine, after considering alternative versions of the rule and the analysis required under (b), (c), and (d) of this subsection, that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated under (a) of this subsection.” Where the references subsections are:

- (a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements;
- (b) Determine that the rule is needed to achieve the general goals and specific objectives stated under (a) of this subsection, and analyze alternatives to rule making and the consequences of not adopting the rule;
- (c) Provide notification in the notice of proposed rulemaking under RCW [34.05.320](#) that a preliminary cost-benefit analysis is available. The preliminary cost-benefit analysis must fulfill the requirements of the cost-benefit analysis under (d) of this subsection. If the agency files a supplemental notice under RCW [34.05.340](#), the supplemental notice must include notification that a revised preliminary cost-benefit analysis is available. A final cost-benefit analysis must be available when the rule is adopted under RCW [34.05.360](#);
- (d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and the specific objectives stated under (a) of this subsection.

Succinctly, Ecology is required to determine that the contents of the proposed rule amendment are the least burdensome set of requirements that still achieve the goals and objectives of the authorizing statute.

Ecology assessed alternatives to elements of the proposed rule amendment, and determined whether they met the goals and objectives of the authorizing statute. Of those that would meet these objectives, Ecology determined whether those chosen for the proposed rule were the least burdensome.

6.2 Goals and objectives

The authorizing statute for the proposed rule is Chapter 70.105 RCW, Hazardous Waste Management Act. The purpose of this statute is to establish a comprehensive statewide framework for the planning, regulation, control, and management of hazardous waste which prevent land, air, and water pollution and conserve the natural, economic, and energy resources of the state. To accomplish this end the Legislature gave Ecology’s Hazardous Waste and Toxics Reduction Program the authority to enact and enforce regulations relating to the management of

dangerous wastes and releases of dangerous substances.

The statute is intended to provide for prevention of problems related to improper management of hazardous substances. Another purpose of the statute is to ensure that hazardous waste management facilities are operated safely, and sited to minimize harm to people and the environment. A major goal of the Act is to promote waste reduction and to encourage other improvements by generators in waste management practices.

6.3 Alternatives Considered

This section details Ecology's analysis of the various alternatives considered when developing the amendments.

6.3.1 Academic labs

The proposed academic laboratory rule is less burdensome than the baseline dangerous waste regulations. It allows generators optional, easier methods to manage waste within the academic laboratory setting, while maintaining a similar level of protection to current regulations. The proposed rule amendment provides a yearly clean out of lab chemicals without the generator having to count the waste towards their generator status.

The proposed rule amendment varies slightly from the federal rule. Ecology added a requirement to physically attach the accumulation start date and a risk label onto dangerous waste containers. Directly placing a start date on each container is a visual cue to help ensure that the generator is removing the container from the laboratory within regulatory time limits. The risk label is already a state-only requirement for dangerous waste containers. In the lab setting, it is important that students, other lab workers, and first responders are aware of the risks.

There are also a few other additional state-only paper work requirements for the academic setting. These requirements pertain to academic institutions notifying Ecology of their participation in the academic laboratory regulatory program (known as Subpart K Rules in RCRA). These paperwork requirements are necessary because of how Ecology's/EPA generator identification system operates. Every generator who uses the system must follow the same requirements.

These proposed rule amendments are the least burdensome because the amendments provide eligible academic entities the opportunity to reduce compliance costs by opting for alternative management practices, while meeting the goals and objectives.

6.3.2 Saccharin

EPA removed saccharin (waste code U202) from listing as a commercial chemical product. EPA determined that saccharin and its salts do not meet federal hazardous waste criteria. Although states are not required to remove saccharin from their hazardous waste regulations, there is not a reason to keep it in state regulations if it is not regulated at the federal level.

Ecology considered not adopting this federal rule and keeping saccharin as a state-only waste. However, the alternative of keeping saccharin as a state only waste would have required evaluation by generators to determine toxicity, which would have increased compliance costs.

Choosing to adopt the federal rule is the least burdensome alternative because it reduces compliance costs and meets the goals and objectives of the rule.

6.3.3 Carbamate LDR

Ecology is proposing to adopt an optional Land Disposal Restriction (LDR) rule modifying the Universal Treatment Standards for carbamate chemical wastes. This proposed rule amendment allows use of technology based treatment methods instead of numerical testing methods.

Ecology considered not allowing the use of technology based treatment methods. However, EPA found that currently available testing methods were not adequate for determining if LDR concentration limits were met. If this proposal is not adopted, it would be difficult to determine if carbamate LDR standards are met, and if the carbamate would be acceptable for land filling. Accordingly, not adopting the rule would contradict the goals and objectives of the rule.

6.3.4 Special waste at transfer stations

Ecology considered longer storage times for special waste at transfer stations. However, longer storage times increases the likelihood of exposure to potentially harmful waste streams. Accordingly, the status quo would not meet the goals and objectives of the underlying regulations. Accordingly, the proposed rule amendment is the least burdensome alternative.

6.3.5 Update chemical test methods (CTM)

The Chemical Test Methods guidance was revised in response to confusion over appropriate halogenated organic compound (HOC) test methods. The proposed rule amendments were based on scientifically determining the most appropriate methods for carrying out required HOC testing.

Ecology considered not updating the guidance for allowable test methods. However, the proposed updates provide a more streamlined approach to choosing test methods for HOCs, and provide testing alternatives that could reduce testing costs for generators. Accordingly, updating the test methods is the least burdensome alternative.

6.3.6 Independent Qualified Registered Professional Engineer (IQRPE)

Ecology is proposing to adopt rule amendments pertaining to regulatory requirements for professional engineer certifications at treatment, storage, and disposal facilities (TSDFs). The proposed rule amendments require the use of an independent professional engineer to certify TSDFs construction projects.

These proposed rule amendments are in-line with previous rule amendments maintaining the IQRPE requirement, and provide internal consistency in the rules.

As alternative, Ecology considered further expanding the IQRPE requirement to include:

- Development and implementation of construction quality assurance program (WAC173-303-335 (1) (a));
- Certification of technical data, such as design drawings, specifications, and engineering studies for final facility permits (WAC173-303-806 (4) (a));
- Certification of construction and modification to facilities applying for general permits (WAC 173-303-810 (14) (a) (i)).

However, Ecology determined that the additional provisions would prove more burdensome as the additional provisions would likely increase compliance costs without providing additional protection. In addition, Ecology determined that maintaining the status quo would not meet the goals and objectives of the underlying statutes and rules. Accordingly, the proposed rule amendment is the least burdensome alternative.

6.3.7 Enforceable documents

This proposed rule amendment allows facilities to use alternative Model Toxics Control Act (MTCA) documents, such as enforceable documents, in place of a RCRA post closure permit. Ecology considered maintaining the status quo and not adopting the optional federal rule. However, such an alternative would prove more burdensome. Offering the option to use enforceable documents would likely result in reduced compliance costs for affected entities.

Ecology determined these proposed rule amendments would give more flexibility to both the facilities and Ecology staff in implementing post closure regulations. Further, Ecology would be able to cost recover staff time spent on a post closure project. Also, MTCA allows Ecology to do periodic reviews of a post closure site, whereas the RCRA post closure permit is only renewed every 10 years. This would help ensure better environmental oversight.

6.3.8 Financial assurance

Proposed rule amendments to the financial assurance rules are mainly to clarify the intent of the regulations or to codify existing practices and guidance (both from Ecology and EPA). For facilities that use the financial test or corporate guarantee option, we are proposing to raise the tangible net worth requirement from \$20 million to \$25 million. This change was proposed to keep pace with inflation.¹⁹ Maintaining the status quo would fail to meet the goals and objectives of the underlying rules regarding management of dangerous waste in general, and financial assurance, in particular.

We are also proposing to increase the minimum financial assurance amounts for liability coverage. This change was also made to keep pace with inflation. Ecology considered how other

¹⁹ As mentioned above, Ecology uses the National Income and Product Account tables provided by the BEA to determine appropriate inflation levels for financial assurance requirements.

states have dealt with liability coverage, particularly since the minimum liability insurance amounts have not been updated since 1982. Some states have adopted provisions that make it more difficult for TSDs to be in compliance with financial assurance regulations by disallowing the use of a financial test or corporate guarantee for financial assurance, or requiring facilities to meet minimum financial strength requirements. Other states expanded the financial assurance criteria to include recycling facilities and transfer stations. Ecology considers these alternatives as more burdensome than raising the minimum amount for liability coverage.

Ecology is also proposing rules for financial assurance at corrective action sites. Currently there are no federal or state financial assurance rules for corrective action sites. EPA guidance is used instead. The proposed rules are similar to existing regulations for closure/post closure financial assurance, and mirror current practices for implementing corrective action financial assurance. Because the regulations currently do not have corrective action financial assurance requirements, considerable time is spent by Ecology and facility staff in negotiating terms. Having requirements in rule would greatly reduce time spent on these negotiations. Without these proposed rule amendments, there would be continued confusion and time spent negotiating terms for financial assurance at corrective action sites. Accordingly, proposing to adopt new provisions for financial assurance at corrective action sites is the least burdensome alternative.

In sum, Ecology determined that the proposed rule amendments concerning financial assurance are the least burdensome alternative that also meets the goal and objectives of the rule.

6.4 Conclusions

After considering alternatives to the proposal, as well as the goals and objectives of the authorizing statute, Ecology determined that the proposed rule represents the least burdensome alternative of possible rule contents meeting these goals.

Appendix A: Crosswalk of Amendments to Chapter 173-303 WAC

Codes

FF- RCRA rules affecting generators/TSDs managing RCRA waste

FS – RCRA rule with additional state-only requirements affecting generators/TSD’s managing RCRA and state-only waste

SF – State-only rule affecting generators/TSDs managing state-only and federal waste

SS – State-only rule affecting generators/TSDs managing state-only waste

Federal Requirement: RCRA rule not required to adopt.

Federal Requirement-Exempt: Non-optional RCRA rules we are required to adopt.

APA Compliance Criteria Codes

NA – Analysis not required

Q – Analysis required

CS – Cost Savings

E – Edit only

K – Clarification

WAC 173-303 Amended Section	Federal Requirement (Abbreviated Rule Name)	Federal or State Requirement Codes	34.05.328 and 19.85 Compliance Criteria	Explanation of changes and analysis needed
FEDERAL RULES BEING ADOPTED				
070(7)(c)(vi)	Academic lab Rule	FF, FS	Q, CS	Federal Requirement
070(7)(c)(vii)	Academic Lab Rule	FF, FS	Q, CS	Federal Requirement
170(7)	Academic Lab Rule	FF, FS	Q, CS	Federal Requirement
235	Academic Lab Rule	FF, FS	Q, CS	Federal Requirement
170(6)	Import/Export Revisions	FF	NA	Federal Requirement-exempt. Required to adopt
230(1) IBR	Import/Export Revisions	FF	NA	Federal Requirement-exempt. Required to adopt
240(11)	Import/Export Revisions	FF	NA, E	Federal Requirement-exempt
290(1)(b)	Import/Export Revisions	FF	NA, E	Federal Requirement-exempt
370(3)	Import/Export Revisions	FF	NA, E	Federal Requirement-exempt
370(7)	Import/Export Revisions	FF	NA,E	Federal Requirement-exempt

520(1)(a) and (b)	Import/Export Revisions	FF	NA	Federal Requirement-exempt. Required to adopt
040	CFR Corrections	FF	NA	Federal Requirement
016(5)(Table 1)	CFR Corrections	FF	NA, K	Federal Requirement
070(8)(a)(iii)	CFR Corrections	FF	NA, E	Federal Requirement
090(7)(a)(viii)	CFR Corrections	FF	NA, E	Federal Requirement
120(3)	CFR Corrections	FF	NA, K	Federal Requirement
120(3)(d)	CFR Corrections	FF	NA, K	Federal Requirement
120(4)(b)(iv)	CFR Corrections	FF	NA, K	Federal Requirement-
180(3)(f)	CFR Corrections	FF	NA	Federal Requirement-exempt manifest rule
200(1)(f)	CFR Corrections	FF	NA, K	Federal Requirement
200(1)(g)	CFR Corrections	FF	NA, K	Federal Requirement
200(2)(a)	CFR Corrections	FF	NA, K	Federal Requirement
200(2)(b)	CFR Corrections	FF	NA, K	Federal Requirement
200(3)(c)	CFR Corrections	FF	NA, K	Federal Requirement
220(2)(e) and Note	CFR Corrections	FF	NA	Federal Requirement-exempt manifest rule
230(2)	CFR Corrections	FF	NA	Federal Requirement-exempt manifest rule
350(2)	CFR Corrections	FF	NA, E	Federal Requirement
370(5)(e)(vi)	CFR Corrections	FF	NA	Federal Requirement-exempt manifest rule
370(5)(f)(i)	CFR Corrections	FF	NA	Federal Requirement-exempt manifest rule
370(5)(f)(vii)	CFR Corrections	FF	NA	Federal Requirement-exempt manifest rule
370(5)(f)(viii)	CFR Corrections	FF	NA	Federal Requirement-exempt manifest rule
505(1)(b)(i)	CFR Corrections	FF	NA	Federal Requirement-exempt LDR rule
810(8)(b)	CFR Corrections	FF	NA, K	Federal Requirement
9903(U239)	CFR Corrections	FF	NA, E	Federal Requirement
9904(F037)	CFR Corrections	FF	NA, E	Federal Requirement
9904(K107)	CFR Corrections	FF	NA, E	Federal Requirement
9903(U202)	Saccharin	FF	Q, CS	Federal Requirement-chose to drop U202 as listed waste
9905	Saccharin	FF	Q, CS	Federal Requirement
180(7)(a)	Manifest	FF	NA	Federal Requirement-Exempt manifest rule

140(2)(a)	LDR Carbamates	FF	Q, CS	Federal Requirement-provides alternative standard
WAC 173-303 Amended Section	Change	Federal or State Requirement Codes	34.05.328 and 19.85 Compliance Criteria	Explanation of changes and analysis needed
STATE INITIATED RULE AMENDMENT, CORRECTION, CLARIFICATION, or NEEDED FOR CONSISTENCY WITH FEDERAL RULES				
040	Enforceable Document-correct references	FF, FS	NA, E	Citation for alternative closure/post closure requirements is corrected.
040	Modify the definitions for "Dermal Rabbit LD 50", "Fish LC 50" and Inhalation Rat LC50" to include half or more of the target population.	SS	NA, K	Clarify that bioassay tests where half or more of the target population is killed is a state toxic waste. These changes don't affect the meaning of the definitions.
040	In the definition for "facility" correct the RCW reference.	FF, FS	NA, E	Citation corrected.
040	In the definition for "Release" the RCW reference is corrected.	SF	NA, E	Citation corrected.
045	Revise the date for latest revision of the RCRA program	FF, FS	NA, K	Informs readers they must use the latest version of RCRA where we incorporate it by reference.
071(1)(b)	Clarification that any person who generates a solid waste must designate it.	FF, FS	NA, K,	Language is modified to more closely match RCRA requirements and clarify that a generator must designate their solid waste.
072(1)(b)	Remove non-existent subsection (5) from second sentence.	FF, FS	NA, E	Internal citation corrected.
073(1)	Cite the definition of special waste found in 040.	SS	NA, K	Provides clarity on applicability of 073 special waste section.
073(2)(e)	Set a 30 day time limit for special wastes held at transfer stations	SS	Q	No time limit currently exists for storage of wastes passing through a transfer station. The

				transfer station operator can apply to the solid waste permitting agency for a time extension.
073(2)(g)	Clarify that transport of special waste must meet US DOT hazardous materials shipping requirements.	SS	NA,	This information is provided to make special waste generators aware of US DOT requirements, and does not impose any new dangerous waste requirement.
073(2)(g)(i) and (ii)	Update references to the revised WAC 173-303-351	SS	NA, K, E	Clarify existing requirement that special wastes disposed in alternative design landfills must have an engineered liner with leachate collection.
100(5)(b)(i)	Insert hyper script “d” following parenthetical description of test endpoints.	SS	NA, E	Correction.
110(3)(a)	Update to latest edition of SW-846 and update means to access it.	FF, FS	NA, E	Correction.
110(3)(c) 110(7)	Update Chemical Test Methods guidance (pub #97-407)	SS, SF	Q, CS	The revision will clarify appropriate test methods to be used to designate persistent wastes. It simplifies testing procedures by reducing number of tests required to designate for halogenated organic compounds.
130	Delete WAC 173-303-130 “Containment and control of infectious wastes”.	SS	NA	The section is deleted to reduce confusion and part of effort to remove reserved sections.
140(4)(d)(iii) 335(4) 400(3)(c)(vi)(B) 610(6) 610(11) 810(14)(a)(i) 830(4)(a)(i)(A)	Add language allowing facilities to submit information to ecology via electronic format, such as email or fax.	SS, FS	Q, CS	These changes will be consistent with state law requiring state agencies to accept documents submitted electronically. Facilities will be able to save time and money by submitting documents

				electronically.
170(3)	This change clarifies that the TSD facility requirements are the final facility standards found in section 600, which include sections 280-395 by reference.	FF, FS	NA, K	The regulations don't clearly say that a person or facility that accepts dangerous waste from other generators must have a RCRA permit or be a dangerous waste recycling facility. The changes to 170(3), 370(1), and 600(2) clarify who is allowed to receive dangerous waste. No new requirements are added.
370(1)	370(1) clarifies that the phrase "owners and operators" applies specifically to owners and operators of permitted TSD and DW recycling facilities.	FF, FS	NA, K	
600(2)	600(2) clarifies that only permitted dangerous waste facilities, DW recycling facilities or exempted facilities can accept DW from off-site sources.	FF, FS	NA, K	
180(3)(c)	Delete 180(3)(c) dangerous waste shipment instructions.	FF, FS	NA, K	This rule isn't needed because it repeats the text in 180(1)(c).
180(6)	Correct manifest instructions	FF, FS	NA, E	Correct error in manifest item numbering.
190(5)(b)(ii)	Correct citation.	FF, FS	NA, E	Correction.
200(1)(b)(iv) 200(4)(a)(iv)(III) 400(3)(c)(xxii)(B) 64690 650(4)(c) 650(5)(d)(ii)(B) 660(6)(e)(ii) 665(2)(a)(i) 806(4)(d)(v) twice 806(4)(e)(iii)(A)(I) 806(4)(h)(ii)(A)(I)	Add the requirement that facilities use an "independent qualified registered professional engineer" instead of a "qualified Professional Engineer" for certifications	FF, FS	Q	These changes clarify that facilities must use an independent PE in situations where PE certifications are required. This change maintains consistency with other WAC 173-303 requirements where independent qualified registered professional

				<p>engineer must be used. For most of these cites it imposes an additional more stringent requirement.</p> <p>(Italicized cites are more stringent requirement)</p>
200(1)(b)(iv)(B)	Move second sentence to new 200(1)(g).	FF, FS	NA, K	Correct rule placement error. This rule applies to all generators covered under 200(1). Its current placement makes it applicable only to 200(1)(b)(iv) containment buildings.
200(5) 400(3)(c)(xxii)(B) 040	Delete definition of "Performance track member facility" and subsection 200(5) dealing with National Environmental Performance Track program.	FF, FS	NA, K	The National Environmental Performance Track program (NEPT) was terminated by EPA on May 19, 2009. EPA does not intend to reinstate the program, but has not yet removed the NEPT regulations from RCRA. Ecology proposes to remove references to the program from our dangerous waste regulations.
200(2)(b) and (c)	Delete the phrase "per waste stream"		NA	Align with federal language. No affect on generators.
240(6)	Grammar correction	FF, FS	NA, E	Edit.
330(1)(d)	Editing correction	FF, FS	NA, E, K	Edit and clarification.
380(1)(r)	Add a new paragraph (r) requiring certificates of major tank system repair (as required by 640(7)(f)) to be retained in the operating record.	FF, FS	NA,	Matches RCRA. No new requirements are added.
400(3)(c)(ii)(G) 645(1)(e) 800(2) 800(12) 806(4)(a) 806(4)(o)	Adopt federal rules that allow use of enforceable documents, such as MTCA Agreed Orders, in lieu of RCRA post closure permits at interim status	FF, FS	Q, CS	These are optional federal rules intended to provide an easier, more efficient regulatory process for closed correction action sites, as compared to a

	facilities.			full –on RCRA post closure permit.
505(1)(b)(iv)	Citation is corrected	FF, FS	NA, E	Technical correction
573(9)(b)(ii)(A)	Correction	FF, FS	NA, E	Technical correction to match federal rule language.
573(19)(iv) and (v)	Correct language for universal waste	FF, FS	NA, K	Technical correction to match federal rule.
600(1)	Revise introductory purpose statement to clarify meaning	FF, FS	NA, K	Clarification with no added requirements.
610(3)(a)(ix) 610(3)(b)(ii)(D) 610(8)(b)(iv) 610(8)(d)(ii)(D) 040 “enforceable	Correct citation reference	FF, FS	NA, K	Technical correction.
610(4)(c)	Correct internal citations	FF, FS	NA, E	Technical correction.
610(12)(f)	Correction	FF, FS	NA, E	Editing correction.
620(1)(d)(i)	Correct citation reference	FF, FS	NA, E	Technical correction.
620(3)(a)(ii) 620(6)(a) 620(9)(a)	Revise wording to be gender neutral.	FF, FS	NA, E	Editing correction.
620(3)(a)(ii) 620(5)(a)	Revise to ensure that cost estimates for financial assurance are done by a third party, and not by a related corporate entity.	FF, SF	NA, K	No added requirements. State is adding language to clarify intent of regulations.
620(3)(a)(v) 620(4)(g) 620(6)(c)	Revise rules to clarify that cost estimates for closure and post-closure financial assurance must be in current dollars, and net present value adjustments are not allowed.	FF, SF	NA, K	No added requirements. State is adding language to clarify intent of regulations.
620(4)(a)(vi) 620(6)(a)(vi)	Revise rules to clarify that the financial test and the corporate guarantee are two separate but related options.	FF, SF	NA, K	No added requirements. State is adding language to clarify intent of regulations.
620(4)(d)(iv) 620(6)(a)(vi) 620(8)(a)(iv)	Raise the minimum tangible net worth requirement from \$20 million to \$25 million to qualify for use of the financial test or corporate	FF, SF	Q	This change raises the tangible net worth requirement to keep pace with inflation.

	guarantee option.			
620(4)(d)(v)	Add rule language allowing facility owners/operators requesting the use of the financial test or corporate guarantee to submit an “Agreed Upon Procedures” report in place of a “negative assurance” report as required in federal regulations.	FF, SF	NA	Federal rules require a negative assurance financial report from a certified public accountant attesting to the accuracy of the financial documents. CPA’s are no longer allowed to submit this type of report. This rule allows submittal of a type of financial report that is acceptable to EPA. Net effect is no additional requirement, just an alternative requirement.
620(8)(a)(i) <i>(renumber (8)(a)(i), (ii), and (iii))</i>	Update the minimum financial assurance amounts for liability coverage.	FF, SF	Q	The amount of liability coverage is increased to keep pace with inflation.
620(11) 64620(5)	Add rules for corrective action financial assurance	SF	Q	No federal or state financial assurance rules exist for corrective action sites. This rule codifies existing EPA guidance and current Ecology practice as used in Agreed Orders and Consent Decrees.
620(1)(d)(i)	Correct reference	FF	NA, E	Technical Correction.
110(3)(g)(ix) 110(3)(h)(i) 110(3)(h)(vii) 640 (2)(c)(v)(B) <i>Note</i> 640(4)(i)(iii) <i>Note</i> 640(9)(b)	Update test methods	FF	NA, E	Technical correction. Update to current versions of test methods, no added requirements.
645(8)(c)	Add the phrase “...applicable to resource protection wells, which are...” to the fourth sentence.	FF, FS	NA, K	Clarify the set of standards that apply to monitoring wells. No added requirements
650(6)(b)(ii)	Correct citation reference	FF, FS	NA, E	Technical correction.
806(4)(j)(iv)(C) 806(4)(k)(v)(C)	Delete the word “design”	FF, FS	NA, E	Technical correction to match federal rule. No added requirements.

806(4)(n) 811 841	Add solid fuel boiler, liquid fuel boiler and hydrochloric acid production furnace to facilities listed in 806(4)(n), 811 and 841.	FF, FS	NA, E	Technical correction to match federal rule. No added requirements.
830 Appendix I	Add new entry O. "Burden Reduction" to the permit modifications table in Appendix I.	FF, FS	NA, E	Technical correction to match federal rule. No added requirements.
830(4) Appendix I (F)(1)(c) (F)(4)(a) (G)(1)(e) (G)(5)(c) (H)(5)(c)	Add the following note at the end of these citations, <i>"Note: The RCRA section referenced above, 40 CFR 268.8(a)(2)(ii), is no longer in the RCRA regulations. It was removed on April 8, 1996 (61 FR 15599)."</i>	FF, FS	NA, E	Technical correction to match federal rule. No added requirements.
905	Delete rule	SF	NA, K	This rule is in conflict with Administrative Procedure Act (APA) rules. APA rules say a public disclosure request must be responded to within 5 days, but do not require state agencies to furnish public records within a specified time frame. 905 could be interpreted to require Ecology to provide requesters with dangerous waste records within 20 working days.
9903	Correct errors with waste codes, CAS numbers and chemical names.	FF, FS	NA, E	Correct to match federal rule. No added requirements.
9904 K181 9904 K181 (iv) 9904(4)(b) 9904(4)(c) 9904(4)(c)(i) and (ii)	Correct an error in the K181 listing for non wastewaters from dye and pigment production. In addition, six internal references are corrected.	FF	NA, E	Federal requirement-exempt. The K181 listing number is not in effect because of an error when the rules were filed with the Code Revisers Office in July 2009. This error resulted in the listing number itself not becoming adopted during

				the 2009 rule amendment process, but the rule language was adopted. This correction makes the listing fully effective.
9904 K069 listing	Add the administrative stay note for sludge generated from secondary acid scrubber systems in 40 CFR 261.32. The note follows the K069 listing.	FF, FS	NA, E	Technical correction to match the federal K069 listing.

Federal Rules

Academic Labs Standards Applicable to Generators of Hazardous Waste; Alternative Requirements for Hazardous Waste Determination and Accumulation of Unwanted Material at Laboratories Owned by Colleges and Universities and Other Eligible Academic Entities Formally Affiliated With Colleges and Universities, December 1, 2008; 73 FR 72912
Import/Export Revisions to the Requirements for: Transboundary Shipments of Hazardous Wastes Between OECD Member Countries, Export Shipments of Spent Lead-Acid Batteries, Submitting Exception Reports for Export Shipments of Hazardous Wastes, and Imports of Hazardous Wastes, January 8, 2010; 75 FR 1236
CFR Corrections Hazardous Waste Technical Corrections and Clarifications Rule, March 18, 2010; 75 FR 12989
Saccharin Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Removal of Saccharin and Its Salts From the Lists of Hazardous Constituents, Hazardous Wastes, and Hazardous Substances, December 17, 2010; 75 FR 78918
Manifests Hazardous Waste Manifest Printing Specifications Correction Rule, June 22, 2011; 76 FR 36363
LDR Carbamates Land Disposal Restrictions: Revision of the Treatment Standards for Carbamate Wastes, June 13, 2011; 76 FR 34147

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Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Removal of Saccharin and Its Salts from the Lists of Hazardous Constituents, Hazardous Wastes, and Hazardous Substances, 78 Fed. Reg. 78918 (December 17, 2010) (Amending 40 CFR Parts 261, 268, and 302).

Land Disposal Restrictions: Revision of the Treatment Standards for Carbamate Wastes, 76 Fed. Reg. 34147 (June 13, 2011) (Amending 40 CFR Parts 268 and 271).

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