



Hazardous Waste Phase 2 – Academic Lab Rule Fiscal Impact Statement

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Fiscal and Economic Impact

If adopted, DEQ anticipates the Academic Laboratory federal rule and amendment will cause slight increased fiscal and economic impacts for those eligible facilities that choose the rule's alternate, equivalent standard in managing hazardous wastes. The rule is optional for eligible colleges, universities and other formally affiliated academic entities.

This rule is a culmination of many years of investigation, and the Environmental Protection Agency determined eligible facilities opting in would realize an overall annual savings.

Assumptions

DEQ assumes the fiscal and economic impacts identified in federal rulemaking are accurate and apply to Oregon facilities in the same way as determined during federal rulemaking.

Statement of Cost of Compliance

State and federal agencies

The cost to comply with the proposed rules is identical to costs described under small and large businesses.

Oregon DEQ

DEQ anticipates, if adopted, this rule and its amendments will cause additional minor economic impacts on its own revenues or expenses.

Direct Impacts

DEQ's potential loss of revenue from those businesses that would typically increase hazardous waste generator category due to a laboratory cleanout would be minimal, as this has occurred infrequently in the past.

Any rule change requires agency staff training and outreach to regulated businesses. DEQ expects only a small impact resulting from the requirement for new staff training and for performing additional outreach to those eligible businesses through the hazardous waste technical assistance program.

DEQ will need to modify its current web-based reporting system to allow businesses to opt in to notify the agency of the choice to follow the alternate standards.

Local governments

DEQ anticipates there will be no fiscal and economic impacts to local governments as the rule applies only to a very specific group of academic laboratories.

Public

DEQ anticipates there will be no fiscal and economic impacts to the public based on the fiscal and economic impact assessment EPA performed in adopting the rules.

Large businesses - businesses with more than 50 employees

The cost to comply with the proposed rules is identical to costs described under small businesses.

Small businesses – businesses with 50 or fewer employees

The Regulatory Flexibility Act requires EPA to conduct economic assessments for small businesses prior to each rule adoption. EPA determined the proposed rules would not have a significant economic impact on small businesses.¹

Impact on Oregon Colleges and Universities

The rule is optional for eligible colleges, universities and other formally-affiliated academic entities to choose to manage their waste with an alternate and equivalent standard.

Direct Impacts

The rule gives eligible entities the opportunity to reduce compliance costs by opting to abide by the alternative set of generator guidelines. The rule will likely enable eligible entities to:

- Reduce transportation costs to disposal sites,
- Reduce transportation on campus, and
- Protect student and staff from unnecessary risks due to accumulated wastes.

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

In 2008, EPA published a cost benefit analysis of the potential cost savings that eligible units might accrue. EPA estimated an average annual cost savings of \$3,911 which translates into approximately \$4,000 dollars in 2014 dollars.

¹ Source: EPA 2008 Economic Analysis, Regulatory Flexibility Act, p. 81-82

All of the 57 academic institutions in Oregon could have eligible labs. If all potentially eligible academic institutions opted into the rule, the potential savings would be: 57 academic entities x \$3,911 = \$223,000 in annual savings. At a discount rate of 1.32 percent for 20 years, this would be \$5.8 million in total savings.

<p>a. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.</p>	<p>Using recent employment data, DEQ found 862 eligible North American Industry Classification System coded laboratories with 861 of them having less than 50 employees in Oregon that could choose the proposed rule alternate standard.</p> <p>Oregon NAICS Codes included:</p> <table border="0"> <tr> <td>541720 – Research & Develop Humanities</td> <td>36</td> </tr> <tr> <td>541940 – Veterinary Services</td> <td>463</td> </tr> <tr> <td>611210 – Junior Colleges</td> <td>8</td> </tr> <tr> <td>611310 – Colleges, University, Professional</td> <td>95</td> </tr> <tr> <td>611519 – Other Technical, Trade</td> <td>74</td> </tr> <tr> <td>611610 – Fine Arts School</td> <td>176</td> </tr> <tr> <td>622110 – General Medical & Surgical</td> <td>7</td> </tr> <tr> <td>622210 – Psychiatric & Substance Abuse</td> <td>2</td> </tr> </table>	541720 – Research & Develop Humanities	36	541940 – Veterinary Services	463	611210 – Junior Colleges	8	611310 – Colleges, University, Professional	95	611519 – Other Technical, Trade	74	611610 – Fine Arts School	176	622110 – General Medical & Surgical	7	622210 – Psychiatric & Substance Abuse	2
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<p>b. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.</p>	<p>Per EPA’s determination, DEQ anticipates the proposed rules will not affect the costs for training, performing hazardous waste determination, off-site transportation, and disposal of hazardous waste.²</p> <p>Additional Requirements: record keeping, container management standards, and accumulation time limits in managing laboratory waste chemicals (<i>See Appendix A for the associated cost</i>).</p> <p>Estimating costs to develop the required laboratory management plan can vary greatly depending on the complexity of procedures, chemicals, number of labs and the size of the facility. Additional costs may be incurred if a consultant is hired to develop the plan.</p> <p>Similarly, training additional staff and students would vary by the number of individuals working in the labs (<i>see Appendix B – Training Costs</i>).</p>																
<p>c. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.</p>	<p>The laboratories who choose to opt in may see a reduction in hazardous waste reporting and associated fees as the optional annual laboratory cleanout would not have to count the waste towards their hazardous waste generator category. Opting in would also reduce the amount of</p>																

² Source: EPA 2006 Economic Analysis, p. 4-2

	<p>partial containers by the ability to consolidate like chemicals in different labs.</p> <p>Laboratories must develop a one-time laboratory management plan, whether in-house or through a consultant, which could result in additional staff time and potential expense. As each plan is unique to a particular laboratory, DEQ cannot quantify the cost as it depends on size of facility, number of staff and students, etc.</p> <p>No additional resources are required to comply with the proposed rules.</p>
d. Describe how DEQ involved small businesses in developing this proposed rule.	DEQ included small business representatives on the Hazardous Waste Rulemaking Advisory Committee. That committee will advise DEQ on the cost of compliance for small businesses. DEQ will also provide rulemaking notice to eligible NAICS laboratories for additional small business fiscal and economic impact considerations.

Documents relied on for fiscal and economic impact

Document title	Document location
Federal Register entries for the incorporated rule and amendments	Federal Register Federal Register for Technical Corrections
EPA's <i>Assessment of Potential Costs, Benefits and Other Impacts for the Revised standards Applicable to Generators of hazardous Waste; Subpart K – Laboratories Owned by Eligible Academic</i>	EPA 2008 Economic Analysis EPA 2006 Economic Analysis
Oregon Annual Hazardous Waste Reporting for 2013 and 2014	Oregon Department of Environmental Quality Hazardous Waste Program 811 SW Sixth Avenue Portland, OR 97204
Oregon Department of Employment 3 rd quarter 2015 data	Employment Department 875 Union Street NE Salem OR 97311

Advisory committee

DEQ appointed an advisory committee.

As ORS 183.333 requires, DEQ will ask for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact,
- The extent of the impact, and
- Whether the proposed rules would have a significant adverse impact on small businesses and, if so, how DEQ can comply with ORS 183.540.

The committee will review the draft fiscal and economic impact statement and its findings will be included in the record of this rulemaking.

The committee will recommend if the proposed rules would or would not have a significant adverse impact on small businesses in Oregon.

If the committee determines there would be a significant impact to small businesses, as ORS 183.333 and 183.540 require, the committee will consider how DEQ could reduce the rules' fiscal impact on small business by:

- Establishing differing compliance or reporting requirements or time tables for small business;
- Clarifying, consolidating or simplifying the compliance and reporting requirements under the rules for small business;
- Utilizing objective criteria for standards; or
- Otherwise establishing less intrusive or less costly alternatives applicable to small business.

Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel. DEQ determined the proposed rules would have no effect on the development costs because the proposed rules only affect regulated laboratories under the hazardous waste regulations.

Appendix A
EPA's Waste Management Cost Estimates (2008)

Note: "Baseline" refers to practices before this proposed rule.

Table 4-5. Summary of Unit Costs (2008 dollars)		
<u>Cost Category</u>	Baseline Unit Cost	Final Rule Unit Cost
Labeling Containers by Laboratory Worker as Hazardous or Unwanted Material	\$1.49/container	\$1.76/container
Labeling Container by EH&S for HW Determination	\$5.49/container	\$5.49/container
Recordkeeping for Laboratory Clean Outs	N/A	\$4.29/container
Laboratory Management Plan (LMP)	N/A	\$441/year for LMP* \$98/year for update**
Reading the Rule	N/A	\$9/year*
Notification	N/A	\$17/year*
On-Site Travel from CAA and Laboratories for HW Determination and Labeling	CUs and Non-profit research institutes: \$0.25/container for LQGs \$0.55/container for SQGs \$0.13/container for CESQGs Teaching hospitals: \$0.25/container for very large \$0.05/container for large \$0.39/container for small \$0.55/container for very small	N/A
Off-site Transportation (Shipment)	\$401.73/shipment	\$401.73/shipment
Manifests	\$35.01/manifest for LQGs \$34.43/manifest for SQGs \$34.43/manifest for CESQGs	\$35.01/manifest for LQGs \$34.43/manifest for SQGs \$34.43/manifest for CESQGs
Biennial Reporting	\$333/LQG \$0/SQG \$0/CESQG	\$333/LQG \$0/SQG \$0/CESQG
General Administration	\$772/LQG \$515/SQG \$257/CESQG	\$772/LQG \$515/SQG \$257/CESQG
Contingency Planning	\$228/LQG* \$0/SQG \$0/CESQG	\$228/LQG* \$0/SQG \$0/CESQG
Training	\$1,602/EH&S staff \$714/lab manager \$163/lab worker	\$1,602/EH&S staff \$714/lab manager \$163/lab worker
Hazardous Waste Disposal	\$102.34/drum for purchase \$483.10/drum for lab packing \$6.69/drum for loading \$2,192 for incineration	\$102.34/drum for purchase \$483.10/drum for lab packing \$6.69/drum for loading \$2,192 for incineration
* Cost annualized over 10 years assuming a 7% discount rate. ** Cost annualized over 3 years assuming a 7% discount rate.		

Source: EPA 2008 Economic Analysis, p.45

Appendix B
EPA's Training Costs

Table D-1. Estimated Numbers of Lab Workers (2008)			
Large College or University and Non-profit Research Institute	LQG	SQG	CESQG
EH&S Staff	22	8	NA
Laboratory Manager	501	164	NA
Laboratory Worker	2,505	820	NA
Art Studio Manager	13	9	NA
Small College or University and Non-profit Research Institute	LQG	SQG	CESQG
EH&S Staff	2	2	1
Laboratory Manager	22	19	11
Laboratory Worker	110	95	55
Art Studio Manager	2	2	1
Very Large Hospitals	LQG	SQG	CESQG
EH&S Staff	22	8	NA
Laboratory Manager	501	164	NA
Laboratory Worker	2,505	820	NA
Very Small to Large Hospitals	LQG	SQG	CESQG
EH&S Staff	2	2	1
Laboratory Manager	15	6	2
Laboratory Worker	75	30	10
<i>Source: Estimates derived from percentage-based estimates from the National Association of College and University Business Officers, NACUBO 2005 Hazardous Waste Survey, http://www.nacubo.org/Business_and_Policy_Areas/Facilities_and_Environmental_Compliance/Facilities_and_Environmental_News/Results_of_Hazardous_Waste_Survey_Now_Available.html</i>			

Source: EPA 2008 Economic Analysis, Appendix D, p. D-2

The assumption is training is commensurate with the employees' responsibilities. For example, a laboratory manager that completes shipping manifests is assumed to attend a 24-hour OSHA Hazwoper training course and a 4-hour course on preparing manifests. A laboratory manager or worker that does not complete manifests will not attend a course on preparing manifests.

An annual recordkeeping cost of \$16 is an estimate for each college or university to maintain logs of training, for all laboratory workers (i.e., copies of training sign-in sheets). This recordkeeping cost is an estimate assuming 0.6 hours of clerical labor.

The initial, annual training cost (i.e., non-refresher training) of an employee uses a capital recovery factor over the estimated employment period. A laboratory worker is assumed to change every two years, a laboratory manager every four years, and environmental health and safety staff every seven years. Table D-3 shows the estimated annual cost per employee.

Table D-2. Training Course Fees	
Training Course	Course Fee
40 Hour OSHA Hazwoper	\$520.00
24 Hour OSHA Hazwoper	\$310.00
8 Hour Annual Hazwoper Refresher	\$130.00
4 Hour DOT Manifest Training and Annual Refresher	\$125.00
4 hour Hazcom (used as a proxy for OSHA Laboratory Standards training)	\$125.00
2 Hour Hazcom Annual Refresher (used as a proxy for OSHA Laboratory Standards training)	\$25.00

Source: EPA 2008 Economic Analysis, Appendix D, p.D-3

Table D-3. Training Costs		
Employee Type	Training Courses Attended	Total Cost per Employee
EH&S	\$40 Hour OSHA Hazwoper \$4 Hour DOT Manifest Training and Annual Refresher \$8 Hour Annual Hazwoper Refresher	\$1,602
Laboratory Manager/Art Studio Manager – Preparing Manifests (Note that most lab managers do not prepare manifests and estimated costs are overstated.)	\$24 Hour OSHA Hazwoper \$4 Hour DOT Manifest Training and Annual Refresher \$8 Hour Annual Hazwoper Refresher	\$970
Laboratory Manager/Art Studio Manager - Not Preparing Manifests	\$24 Hour OSHA Hazwoper \$8 Hour Annual Hazwoper Refresher	\$714
Laboratory Worker	\$4 hour Hazardous Communications Training \$2 Hour Hazardous Communication Annual Refresher	\$163

Source: EPA 2008 Economic Analysis, Appendix D, p.D-3