State of Oregon Department of Environmental Quality

Oregon Environmental Quality Commission Meeting

Sept. 30-Oct. 1, 2021

Rulemaking, Action Item I
Landfill methane rules

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DEQ Recommendation to the EQC

DEQ recommends that the Environmental Quality Commission:

- Adopt the proposed new rules for Division 239,
- Adopt the proposed revised rules in Division 12; and
- Adopt the proposed revised Table 1 of Division 216, all seen in Attachment A, as part of Chapter 340 of the Oregon Administrative Rules.

Proposed motion language:

I move that the Oregon Environmental Quality Commission:

- *Adopt the proposed new rules for Division 239,*
- *Adopt the proposed revised rules in Division 12; and*
- *Adopt the proposed revised Table 1 of Division 216, all seen in Attachment A of this report, as part of Chapter 340 of the Oregon Administrative Rules.*

Introduction

Methane emissions from landfills represent an important element of Oregon's overall greenhouse gas emissions. Methane is a natural byproduct of the decomposition of organic material in landfills. Methane is a potent greenhouse gas, far more effective than CO_2 at trapping heat in the atmosphere over a 100-year period.[1] In 2017, six of the twenty-five largest stationary sources of GHG emissions in Oregon were landfills.[2]

In Executive Order 20-04, from March 2020, Oregon Governor Kate Brown directed the EQC to take actions necessary to reduce methane emissions from landfills by aligning Oregon's emission rules with the most stringent rules of neighboring states. In reviewing the landfill methane regulations of neighboring states, DEQ determined California has the most stringent landfill gas emission rules of all of Oregon's neighboring states. To ensure Oregon's rule proposal would be federally enforceable, DEQ then incorporated and aligned the draft rules with the federal National Emission Standards for Hazardous Air Pollutants (NESHAPs) and New Source Performance Standards (NSPS) rules regarding landfill gas emissions. Additionally, DEQ incorporated new, Oregon specific, rules to allow for further methane emission reductions, collect data to guide future analysis, and address relevant feedback and data provided by the Rules Advisory Committee.

Based on comments received during the public notice period regarding the regulatory burden and fiscal impacts on counties that run many of the state's smallest landfills, DEQ reviewed the proposed requirements for landfills with less than 200,000 tons of waste-in-place. DEQ's Material's Management Program, which oversees the solid waste disposal permits that each of these landfills already maintains, requests annual reports on how much waste is received at each landfill. Therefore, DEQ has modified the proposed rules to conditionally exempt all landfills with less than 200,000 tons of waste-in-place, if the landfills meet the following requirements: the landfills maintain records of the quantity of waste-in-place and provide the records to DEQ upon request to confirm exemption eligibility and the landfills maintain the waste cover in such a way as to minimize landfill gas emissions. Since the rules previously did not require these small landfills to conduct landfill gas collection or control, DEQ does not anticipate this modification will impact landfill gas emissions in Oregon.

Under the proposed rules, a larger set of Oregon landfills would be regulated by DEQ and already regulated landfills would be subject to additional requirements.

- Larger landfills (over 2.5 million tons capacity) that already have gas collection and control systems based on current rules would have additional monitoring requirements.
- Mid-size landfills (200,000 to 2.5 million tons waste in place) would be required to model potential emissions. If modeled emissions exceed a threshold, mid-size landfills may be required to install a landfill gas collection and control system.

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[1] IPCC, 2007: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp.

[2] Data provided by Oregon Department of Environmental Quality's Greenhouse Gas Reporting Program, 2021.

DEQ also proposes to modify Oregon Administrative Rules Chapter 340 Divisions 12 and 216 as follows:

- Modifications to Division 12, Enforcement Procedure and Civil Penalties, are proposed to incorporate specific violations and classifications based on the proposed landfill gas emission rules.
- Modifications to Division 216, Air Contaminant Discharge Permits, Table 1, are proposed to incorporate permit types for landfills based on the proposed landfill gas emission rules.

Statement of Need

Proposed Rule or Topic	Discussion
New proposed rules – Division 239	
What need would the proposed rule address?	These rules are intended to reduce methane emissions, a strong greenhouse gas, from landfills. In 2017, six of the twenty-five largest stationary sources of GHG emissionsin Oregon were landfills. Currently, landfill gas emissions are only regulated from landfills with a design capacity greater than 2.5 million megagrams or 2.5 million cubicmeters.
How would the proposed rule address theneed?	Smaller landfills would be required to report wastes accepted. Medium landfills would be required to calculate potential methane generation and potentially install GCCS. Large landfills would be requiredto conduct monitoring of surface methane emissions and potentially install and/or upgrade a landfill gas collection and control system. The landfill gas collection and control systems would be required on a larger portion of the landfill and would have a higher destruction efficiency requirement.
How will DEQ know the rule addressed the need?	DEQ would use data on surface emissions and potential methane generation submittedby landfill permittees to monitor and calculate changes in methane emissions perton of waste placed. The data will be submitted to DEQ at least annually. Submitted reports from closed and smaller landfills would improve DEQ's information about potential methane generation and activities that can reduce methane generationand emissions over time.
Update enforcement provisions – Division 12	
What need would the proposed rule address?	Division 12 would be updated to incorporate potential violations of the landfill gas emission rules, to ensure enforceability of the Division 239 rules.
How would the proposed rule address the need?	Including potential violations of Division 239 in Division 12 ensures consistent application of enforcement, when needed, and a level regulatory landscape for facilities subject to Division 239 rules.
How will DEQ know the rule addressed the need?	Div. 12 amendments would address the need if DEQ is able to efficiently and consistently initiate appropriate enforcement actions to address noncompliance with Division 239.

Update permitting provisions – Division 216	
What need would the proposed rule address?	Updates to Division 216 would incorporate permit types associated with the new landfillgas emission rules.
How would the proposed rule address theneed?	Proposed rules would allow DEQ to ensure the landfills identified in Division 239 apply for the correct permit type and charge appropriate fees for permitting and the implementation of Division 239.
How will DEQ know the rule addressed the need?	Div. 216 amendments would address theneed if DEQ is able to efficiently permit landfills subject to Division 239.

Rules Affected, Authorities, Supporting Documents

Lead division
Air Quality Division

Program or activity
Air Quality Planning
Chapter 340 action

Adopt OAR				
340-239-0010	340-239-0015	340-239-0100	340-239-0105	340-239-0110
340-239-200	340-239-300	340-239-400	340-239-500	340-239-600
340-239-0700	340-239-0800			
Amend OAR				
340-216-8010	340-012-0054	340-012-0140		

Statutory Authority - ORS				
468.020	468A.025	468A.040	468A.050	468A.135
468A				

Statutes Implemented - ORS				
468A.025	468A.035	468A.040	468A.050	468A.135

Documents relied on for rulemaking

Document title	Document location
Oregon Solid Waste Disposal Site permit data	Oregon Department of EnvironmentalQuality 700 NE Multnomah St. Suite 600 Portland OR 97232
California Environmental Protection Agency, Air Resources Board, May 2009 *Staff Report: Initial Statement of Reasons forthe Proposed Regulation to Reduce MethaneEmissions from Municipal Solid Waste Landfills*	California Air Resources Board: https://ww3.arb.ca.gov/regact/2009/landfills09/isor.pdf

Document title	Document location
ERG Memorandum, July 2015, *Analysis of Surface Exceedances from California Landfills under the New Source PerformanceStandards and the California Landfill Methane Rule*	https://www.regulations.gov/document/EPA-HQ-OAR-2014-0451-0140
U.S. Global Change Research Program, April 2016, *Impacts of Climate Change onHuman Health in the United States, a Scientific Assessment*	https://www.regulations.gov/document/EPA-HQ-OAR-2014-0451-0211
Oregon Climate Change Research Institute, Oregon State University, Corvallis, Oregon, 2021, *Fifth Oregon Climate Assessment.*	https://blogs.oregonstate.edu/occri/oregon-climate-assessments/
IPCC, 2007: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp.	https://www.ipcc.ch/site/assets/uploads/2018/05/ar4_wg1_full_report-1.pdf
Oregon Global Warming Commission, 2020, Biennial Report to the Legislature, 2020.	https://static1.squarespace.com/static/59c554e0f09ca40655ea6eb0/t/5fe137fac70e3835b6e8f58e/1608595458463/2020-OGWC-Biennial-Report-Legislature.pdf
Code of Federal Regulations	http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR
Federal Register	http://www.gpo.gov/fdsys/browse/collection.action?collectionCode=FR
Oregon Administrative Rules	https://www.oregon.gov/deq/Regulations/Pages/Administrative- Rules.aspx
Oregon Revised Statutes	https://www.oregon.gov/deq/Regulations/P ages/Statutes.aspx

Associated Fees

This rulemaking does not include creation of new fees. If adopted, the proposed rules would require some landfills to obtain new permits, which would require the landfill to pay permitting fees under the current permitting program. Based on data from DEQ's Materials Management Program, DEQ estimates that seven landfills will be newly required to obtain a Simple Air Contaminant Discharge Permit (ACDP) and eight landfills will be newly required to obtain a Standard ACDP. DEQ will work with landfills to verify individual site conditions to determine the appropriate permit type.

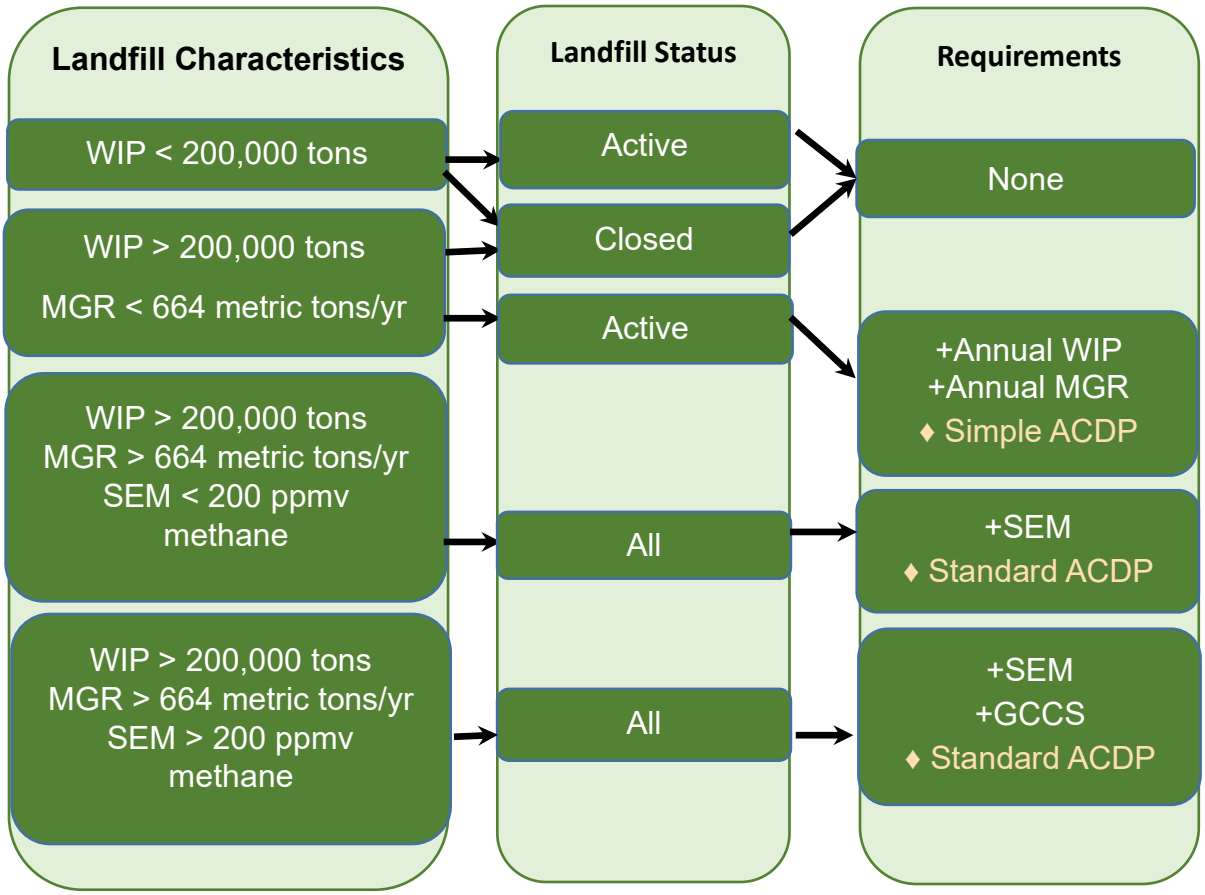
Statement of Fiscal and Economic Impact

Fiscal and Economic Impact

Under the proposed rules, DEQ would require air contaminant discharge permits be obtained by an estimated 15 landfills that have not previously been required to have ACDPs, based on existing information in DEQ databases. The proposed rules would increase reporting, monitoring, and gas control system requirements for the 15 newly permitted entities as well as the 12 landfills that currently have an ACDP. Most landfill owners are local governments, both city and county, or private businesses.

DEQ proposes to require ACDP types (Simple or Standard) based on the levels of anticipated emissions, the extent of control devices required, the extent to which conditions need to be tailored to particular facilities, and on anticipated effort of DEQ staff to prepare and oversee the required activities at the landfills.

- In response to public comments, landfills with under 200,000 tons of waste-in-place would be conditionally exempt from the rules if they maintained an adequate landfill cover. These sites would be required to maintain records verifying the amount of waste-in-place.
- For active landfills with over 200,000 tons of waste-in-place, where landfill gas generation calculations indicate methane generation of less than 664 metric tons per year, DEQ would require a Simple ACDP. Landfill owners or operators in this category would be required to submit annual reports of the amount and type of waste received as well as updated landfill gas generation calculations.
- For active and closed landfills with over 200,000 tons of waste-in-place where landfill gas generation calculations indicate sufficient methane generation to require additional activities and permit conditions (equal to or more than 664 metric tons), DEQ would require a Standard ACDP. Landfill owners or operators in this category would be required to either conduct surface emission monitoring; or, if surface emission monitoring shows methane emissions greater than 200 ppmv, install and maintain a gas collection and control system, along with continued surface emission monitoring.
- Closed landfills that have a calculated methane generation rate below 664 metric tons per year will be required to submit one report and will not be required to obtain a permit under the proposed rules.
- Landfills required to obtain a permit would be subject to Cleaner Air Oregon requirements in OAR Chapter 340, Division 245, as well as associated CAO fees.
    - Landfills that are currently constructed and required to obtain an ACDP under the proposed rules, would be treated as an existing source under CAO, if the construction was conducted with all appropriate approvals under the federal Clean Air Act and the landfill was not operating without a required ACDP.
    - Newly constructed landfills required to obtain a simple or standard air permit would be subject to CAO and required to perform a CAO risk assessment before construction, and if applicable, have risk limits incorporated into the ACDP.
    - Landfills that already have an ACDP will undergo CAO evaluation when they are notified in writing by DEQ following CAO's prioritization schedule.
    - The flow chart below provides a high-level overview of the landfill requirements.



Notes:
WIP = Waste-in-Place
MGR = Methane Generation Rate
SEM = Surface Emission Monitoring
GCCS = Gas Collection and Control System

Statement of Cost of Compliance

Estimated costs of complying with the proposed rules are listed in the following tables and discussed in detail below.

Table 1: Landfill Gas Emissions Permit Types and Fees[1]

Landfill Characteristics[2]	Permit type[2]	Initial Fee	Annual Fee	CAO Fee	Est. no. of sites
Active landfills - greater than 200,000 tons waste-in-place and a calculated methane generation rate below 664 metric tons per year	Simple ACDP[3]	$9,000	$7,834	$1612	7
Active and closed landfills - greater than 200,000 tons waste-in-place, a calculated methane generation rate above 664 metric tons per year, but surface emissions below 200 ppmv methane across the landfill	Standard ACDP	$18,000	$15,759	$3,225	8[a]
Active and closed landfills - greater than 200,000 tons waste-in-place, a calculated methane generation rate above 664 metric tons per year, and surface emissions above 200 ppmv methane anywhere on the landfill	Standard ACDP	$18,000	$15,759	$3,225	

CAO = Cleaner Air Oregon
ACDP = Air Contaminant Discharge Permit
1. Landfills with an existing Air Contaminant Discharge Permit or Title V Permit are not included.
2. Landfills with less than 200,000 tons waste in place will not be required to obtain an air quality permit. The owner or operator will be required to submit one report to verify the exemption. These landfills are not included in this table summary.
3. High fees per OAR 340-216-0064(2)(b).
a. DEQ does not have enough information to assess which landfills will have surface emissions more than 200 ppmv methane. Landfills with surface emissions above 200 ppmv methane are required to install a landfill gas collection and control system.

Table 2: Landfill Gas Emissions Permit Type Requirements

Permit type	Requirement
Simple ACDP	Submit annual WIP and MGR Reports
Standard ACDP	SEM
Standard ACDP	SEM and GCCS installation

ACDP = Air Contaminant Discharge Permit
WIP = Waste-in-Place
MGR = Methane Generation Rate
SEM = Surface Emission Monitoring
GCCS = Landfill Gas Collection and Control System

Table 3: Estimated Permit Compliance Costs

Proposed minimumrequirement	Lump sum cost 2021
Annual Waste-In-Place Report	$4,000
Calculate/report Methane Generation Rate annually	$4,000
Annual Gas Collection and Control System report	$4,000
Surface Emissions Monitoring	$59,792[a]/year
Upgrade Gas Collection and Control System	$1M - $2M[b,c]
Install new Gas Collection and Control System	$1M-$3M[b,c]
Operations and Maintenance	$150,000-$400,000/year
Cleaner Air Oregon Annual Reporting	$5,000/year

a = value obtained by updating CARB 2009 costs to $2021. CARB 2009 costs obtained from California Environmental Protection Agency, Air Resources Board, May 2009, Staff Report: Initial Statement of Reasons for the Proposed Regulation to Reduce Methane Emissions from Municipal Solid Waste Landfills. Costs updated to 2021 using: https://www.bls.gov/data/inflation_calculator.htm
b = based on data provided by the fiscal advisory committee members
c = based on information from EPA's Landfill Methane Outreach Program's LFG cost-Web tool: https://www.epa.gov/lmop/lfgcost-web-landfill-gas-energy-cost-model

Table 4: Itemized estimated permit compliance costs based on permit type and size assumptions

Permit	Reporting WIP (annual)	Reporting MGR (annual)	Reporting GCCS (annual)	SEM (annual)	Install new GCCS (initial)	Upgrade GCCS (initial)	O&M GCCS (annual)
Simple	$4,000	$4,000	NA	NA	NA	NA	NA
Standard: no GCCS req'd[1]	$4,000	$4,000	NA	$59,792	NA	NA	NA
Standard: new GCCS[2]	$4,000	NA	$4,000	$59,792	$1-$3M	NA	$150,000-$400,000
Standard: existing GCCS[3]	$4,000	NA	$4,000	$59,792	NA	$1-$2M	$150,000-$400,000

1. Assuming 20 acre landfill
2. Assuming 50 acre landfill
3. Assuming 100 acre landfill

Table 5: CAO Activity Fees

CAO Activity[1]	Permit type / Fee		
	Standard ACDP	Simple ACDP	Basic ACDP
Existing source call-in	$10,000	$1,000	$500
New source call-in	$12,000	$1,900	$1,000
Level 1 Risk Assessment – de minimis	$1,500	$1,000	$800
Level 1 Risk Assessment – not de minimis	$2,000	$1,500	$1,100

1 – For more information on the fiscal impacts due to Cleaner Air Oregon, see the 2018 Statement of Fiscal and Economic Impact available: https://www.oregon.gov/deq/Rulemaking%20Docs/cao-pn2notice.pdf

Table 6: Permit Specific Activity Fees

Specific Activity[1]	Fee range
Notices of Intent to Construct	$0 or $720
Permit Modifications	$432-$30,612
Modeling Review	$9,000

1 – Not a complete list, see OAR 340-216-8020 Table 2 (ACDP Fees) and Division 220 (TV fees) for a complete list of specific activity fees

State agencies

DEQ would receive additional funds via permit fees to support staff time to write and manage the permits, review permit submittals, implement and manage a data collection system, develop data analysis methods, and coordinate permit information and data collection with other DEQ programs. No other state agencies would be anticipated to have a fiscal impact from the proposed rules.

The proposed rules would not have fiscal effects on other state or federal agencies because there are no additional requirements for these entities.

Local governments

The Lane Regional Air Protection Agency (LRAPA) implements the Air Quality Permitting Program for air permitted facilities in Lane County. According to current data, there are two landfills in Lane County that would be permitted after this rulemaking. Currently, LRAPA permits one landfill, the Short Mountain Landfill. Based on DEQ's data, one additional landfill may be required to obtain and maintain a Standard ACDP permit. The table below lists the landfills located in Lane County and the potential permitting requirements based on the proposed rules.

Table 1: Landfills and Permit Types in Lane County

Site name	Site owner	Permit required before/ after Proposed rules:	Proposed rule requirements
Short Mountain Landfill[1]	Lane County	Title V[1]/Title V	Update GCCS & SEM
Delta Sand & Gravel Demolition Landfill	Delta Sand & Gravel Company	None/Standard ACDP	SEM
Weyerhaeuser - Last Chance Landfill	Weyerhaeuser NR Company	None/None	One WIP Report (no permit)
Florence Landfill	Lane County	None/None	One WIP Report (no permit)
Franklin Landfill	Lane County	None/None	One WIP Report (no permit)
Murphy Plywood Irving Road Disposal Site	Murphy Company	None/None	One WIP Report (no permit)

WIP = Waste in Place
SEM = Surface Emission Monitoring
1. Title V Permit 204740 administered by LRAPA

The proposed rules would have a fiscal impact on Local governments that own or operate landfills due to the increased permitting, monitoring, and potential onsite controls required at landfills.

Five local government-owned landfills would need new AQ permits and be subject to fees, reporting and potentially monitoring requirements. These facilities and the potential minimum requirements are summarized in the table below. The costs associated with complying with these requirements are presented in the Statement of Cost of Compliance section and associated tables.

Table 2: Local Government Owned Landfills

Facility Name	Owner	AQ Permit type (existing)	AQ Permit type (Proposed rule)	Proposed minimum requirement
Milton-Freewater Sanitary Landfill	City of Milton-Freewater	None	None/exempt by size	One WIP Report
Ant Flat Landfill	Wallowa County	None	None/exempt by size	One WIP Report
Salem Airport Disposal Site	City of Salem	None	None/exempt by size	One WIP Report
Haines Landfill	City of Haines	None	None/exempt by size	One WIP Report
Drewsey Disposal Site	Harney County	None	None/exempt by size	One WIP Report
Riley Disposal Site	Harney County	None	None/exempt by size	One WIP Report
Fields Disposal Site	Harney County	None	None/exempt by size	One WIP Report

Facility Name	Owner	AQ Permit type (existing)	AQ Permit type (Proposed rule)	Proposed minimum requirement
Frenchglen Disposal Site	Harney County	None	None/exempt by size	One WIP Report
Thomas Creek Road Landfill	Lake County	None	None/exempt by size	One WIP Report
North Marion County Disposal Facility	Marion County	None	Simple ACDP	Annual MGR Report
Lytle Boulevard Landfill	Malheur County	None	Simple ACDP	Annual MGR Report
Klamath Falls Landfill	Klamath County	None	Standard ACDP	SEM
Crook County Landfill	Crook County	None	Standard ACDP	SEM
Brown's Island Demolition Landfill	Marion County	None	Standard ACDP	SEM
Short Mountain Landfill	Lane County	Title V	Existing permit	Update GCCS & Monitoring
Knott Landfill	Deschutes County	Title V	Existing permit	Update GCCS & Monitoring
St. Johns Landfill	Metro	Title V	Existing permit	Update GCCS & Monitoring
KFD Landfill	City of Portland	None	None	One MGR Report
Beaver Hill Solid Waste Facility	Coos County	None	None	One MGR Report
Grants Pass - Merlin Landfill	City of Grants Pass	None	None	One MGR Report
Fox Hill Landfill	Union County	None	None	One MGR Report
Agate Beach Landfill	City of Newport, Lincoln County Consortium	None	None	One WIP Report
Southwest Landfill	Deschutes County	None	None	One WIP Report
Lake County Landfill	Lake County	None	None	One WIP Report
Joe Ney Construction and Demolition Landfill	Coos County	None	None	One WIP Report
Port Orford Disposal Site	Curry County	None	None	One WIP Report
Tillamook County Landfill	Tillamook County	None	None	One WIP Report
Reedsport Landfill	Douglas County	None	None	One WIP Report
Florence Landfill	Lane County	None	None	One WIP Report
Box Canyon Landfill	Jefferson County	None	None	One WIP Report
Sunrise Park (Obrist) Landfill	City of Troutdale	None	None	One WIP Report
Kerby Landfill	Josephine County	None	None	One WIP Report
Crescent Landfill	Klamath County	None	None	One WIP Report
Bandon Disposal Site	Coos County	None	None	One WIP Report
Franklin Landfill	Lane County	None	None	One WIP Report
Astoria Landfill	City of Astoria	None	None	One WIP Report
Hood River Landfill	Hood River County	None	None	One WIP Report
Vernonia Landfill	City of Vernonia	None	None	One WIP Report

WIP = Waste-in-Place
MGR = Methane Generation Rate
SEM = Surface Emission Monitoring
GCCS = Landfill Gas Collection and Control System

Public

The proposed rules would not have a direct fiscal impact on the public. Costs to local governments or businesses may be passed onto the public by increased solid waste tipping fees. DEQ is unable to quantify the impact at this time since the decision on how to fund these additional fees would be up to landfill operators/owners.

Public benefit

The proposed permanent rules should provide for future reduced costs to the general public from the reduction of greenhouse gas emissions and the impacts of climate change. Table 3 provides an estimate of the reduced social cost of carbon due to the lower thresholds and higher destruction efficiency required for landfill gas collection and control systems. There are a wide variety of potential control systems. Therefore, DEQ provided four theoretical landfills of different sizes with different controls that could be used on that size of landfill to show the range of impacts; these do not represent actual landfills in Oregon. Additional reductions in greenhouse gas emissions would occur from the tighter surface emission monitoring, increased requirements for visual cover inspections, and reporting of actions conducted to reduce methane emissions from landfills. DEQ is unable to quantify the total positive impact since the actual methane reduction that would be attributable to this rule cannot be quantified at this time.

Table 3: Avoided social costs from gas collection system requirements

Size (acres)	Annual waste acceptance (ton/yr)	Control	Average annual methane destroyed 98% destruction (million ft^3)	Average annual methane destroyed 99% destruction (million ft^3)	Avoided social costs[2]	
					Increased destruction [3]	Lower GCCS threshold [4]
20	75,000	Direct-use	2,084	2,106	NA	$67M
50	150,000	RNG	4,168	4,211	NA	$134M
100	800,000	Turbine	22,232	22,459	$7M	NA
300	2,000,000	CHP Engine	55,580	56,147	$18M	NA

1 Assume 10-year life span and 75% collection efficiency.
2 https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf
3 Current federal regulations require 98% destruction while the proposed rules require 99% destruction.
4 The proposed rules will require some landfills to install GCCS that would not be required under federal rules. It is assumed the two largest landfills presented would be required to install a GCCS under federal rules while the two smaller landfills would not.
CHP = Combined heat and power
Costs and MMTCO2E avoided values from LMOP
RNG – Renewable natural gas
Negative costs from selling natural gas or electricity not included.
CH4 Gas Generated (scfm) = CH4 Generation (Mg/year) x 1 year/ 525,600 minutes x 1,000,000 g/Mg x 1 mole CH4/16.04246 g CH4 x 0.83662 SCF/mole landfill gas
Based on information from EPA's Landfill Methane Outreach Program's LFG cost-Web tool: https://www.epa.gov/lmop/lfgcost-web-landfill-gas-energy-cost-model

One such methane emission reduction in the proposed rules comes from a more stringent onsite emission monitoring requirement. The proposed rules require extensive surface emission monitoring, in alignment with the California Landfill Methane Rule, which requires monitoring on a 25-foot grid and integrated surface emission monitoring. The current federal regulations and Oregon rules require monitoring on a 30-meter (98 foot) grid. A 2015 analysis by Eastern Research Group showed that the smaller (25-foot) monitoring grid resulted in increased exceedances detected. Detected exceedances are mitigated by either fixing the landfill cover or fixing the landfill cover and installing a landfill gas collection and control system, thus reducing the methane emissions from the landfill. ERG was unable to calculate the actual methane reduction; however, DEQ anticipates decreased methane emissions from landfills from the proposed rules by locating and fixing additional leaks due to the smaller grid size.

The public would also benefit from other public health improvements due to the capture and destruction of more landfill gas. Landfill gas is composed of methane, carbon dioxide, and various other toxic gasses. DEQ did not calculate the estimated public benefit due to the destruction of additional toxic landfill gasses.

Large businesses - businesses with more than 50 employees

DEQ reviewed the owners of landfills that currently have landfill gas collection and control systems. These landfills are generally owned by large businesses (over 50 employees) if the parent company (Waste Management, Republic Services, Waste Connections, etc.) is considered when reviewing the business size. This aligns with the definition of small business in ORS 183.310:

> *"Small business" means a corporation, partnership, sole proprietorship or other legal entity formed for the purpose of making a profit, which is independently owned and operated from all other businesses and which has 50 or fewer employees.*

DEQ estimates that active landfills with more than 200,000 tons of waste-in-place are largely operated by large businesses or local governments. DEQ assumes that landfills with a larger tonnage of waste-in-place require more resources to be properly maintained and are often owned and/or operated by a larger waste management company. Based on this assumption, 25 landfills are owned by a large business. Twelve of these landfills already have an air permit, those permits would be modified through a DEQ initiated modification and would not experience additional permit fees.

The proposed rules would require additional monitoring, control efficiency, reporting, and shutdown requirements for the landfills with existing air permits. The proposed rules would require new air contaminant discharge permits, more stringent monitoring requirements, reporting requirements, control efficiency, and shutdown requirements for the landfills that do not currently have an air contaminant discharge permit. Newly constructed landfills required to obtain a permit would be subject to Cleaner Air Oregon requirements in OAR Chapter 340, Division 245 and associated fees. Landfills that already have a permit or were previously constructed and appropriately operating without an air permit were already subject to Division 245 requirements based on the existing CAO program call-in and

applicability process. Estimated costs for these activities are provided in the Fiscal and Economic Impacts section.

Small businesses – businesses with 50 or fewer employees

DEQ estimates that landfills with less than or equal to 200,000 tons of waste-in-place, as well as closed landfills, would be typically operated by small businesses, since these smaller and closed landfills require fewer personnel to properly maintain.

Based on the data from DEQ's Materials Management Program, 24 landfills are active and contain less than or equal to 200,000 tons of solid waste and DEQ considers these landfills as small businesses for this analysis. Landfills with less than 200,000 tons of waste-in-place are conditionally exempt from the proposed rules if they meet certain recordkeeping and operational requirements.

There are 57 closed landfills in DEQ's Materials Management database. Of these, six have not received waste since 1987 and would be exempt from the proposed rules. Out of the 51 left DEQ estimates that the owners of 49 of the sites would be required to submit one report (Waste-in-Place or Methane Generation Rate report) and then would not be required to conduct further activities due to being below either the WIP or MGR thresholds. These one-time reports would likely cost approximately $2,000-$5,000 to prepare and submit to DEQ. The two remaining closed landfills already have air contaminant discharge permits.

ORS 183.336 - Cost of Compliance for Small Businesses

1. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.

DEQ expects that closed landfills would be owned or operated by small businesses, such as solid waste management companies. Under the proposed rules, no additional small businesses would experience a fiscal impact from complying with the proposed rules, either one-time or through ongoing reporting requirements.

2. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.

Assuming the landfills owned by small businesses are closed landfills, the additional reporting requirements are annual reporting of the types and amounts of waste received. The two closed landfills in this category that are already permitted would have slightly more stringent monitoring and reporting requirements. Landfills already track the waste received amounts and types, so these costs represent costs to assess and submit the existing data to DEQ. DEQ estimates this would cost approximately $4,000 per report. This fee is detailed in the Estimated Permit Compliance Costs table in the Fiscal and Economic Impact section.

If a landfill exceeds 200,000 tons waste-in-place, the owner would be required to calculate the potential methane generation. DEQ estimates this would cost approximately $4,000 per event.

Cleaner Air Oregon
Under the proposed rules, small business landfill owners and operators would also be subject to reporting requirements for Cleaner Air Oregon and generally would not have been subject to CAO before because DEQ did not require these landfills to have air permits. Under the CAO regulations, all facilities that emit toxic air contaminants may be required to report emissions to DEQ a minimum of every three years. Facilities that have permit requirements to limit toxic air contaminant emissions must report compliance annually or semi-annually. An initial emissions inventory would likely create the greatest workload for facilities, while updating this inventory should involve minimal costs. DEQ's analysis of potential costs due to the Cleaner Air Oregon requirements are included in the 2018 CAO fiscal impact statement.

3. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.

Costs to small business associated with reporting, recordkeeping and other administrative are discussed in the New Reporting Requirements section of the Fiscal and Economic Impact section above.

4. Describe how DEQ involved small businesses in developing this proposed rule.

DEQ notified small businesses during rule development by announcements on the DEQ website and advisory committee meetings. Small businesses were invited to comment during advisory committee meetings during rule development. DEQ invited the Oregon Refuse and Recycling Association (ORRA) to be on the rules advisory committee to involve small waste management businesses in the proposed rulemaking.

Documents relied on for fiscal and economic impact

Document title	Document location
Oregon Administrative Rule, Chapter 340 Division 216: Air Contaminant Discharge Permits – Table 1 and Table 2	https://secure.sos.state.or.us/oard/view.action?ruleNumber=340-216-8010 https://secure.sos.state.or.us/oard/view.action?ruleNumber=340-216-8020
Oregon Solid Waste Disposal Site Permit data	Oregon Department of Environmental Quality 700 NE Multnomah St. Suite 600 Portland OR 97232

Document title	Document location
California Environmental Protection Agency, Air Resources Board, May 2009 *Staff Report: Initial Statement of Reasons for the Proposed Regulation to Reduce Methane Emissions from Municipal Solid Waste Landfills*	California Air Resources Board: https://ww3.arb.ca.gov/regact/2009/landfills09/isor.pdf
U.S. Bureau of Labor Statistics, CPI Inflation Calculator	https://www.bls.gov/data/inflation_calculator.htm
ERG Memorandum, July 2015, *Analysis of Surface Exceedances from California Landfills under the New Source Performance Standards and the California Landfill Methane Rule*	https://www.regulations.gov/document/EPA-HQ-OAR-2014-0451-0140
U.S. Global Change Research Program, April 2016, *Impacts of Climate Change on Human Health in the United States, a Scientific Assessment*	https://www.regulations.gov/document/EPA-HQ-OAR-2014-0451-0211
Oregon Department of Environmental Quality. 2018. *Notice of Proposed Rulemaking Cleaner Air Oregon*	https://www.oregon.gov/deq/Rulemaking%20Docs/cao-pn2notice.pdf
Email from: Pat Sullivan SCCS Engineers, Subject: Cost Information for Rule Compliance. Dated May 14, 2021	Oregon Department of Environmental Quality 700 NE Multnomah St. Suite 600 Portland OR 97232
Email from: Jesse Berger, Lane County Public Works, Subject: Flare Cost. Dated April 20, 2021	Oregon Department of Environmental Quality 700 NE Multnomah St. Suite 600 Portland OR 97232
Email from: Amelia Reiver Schlusser, Green Energy Institute, Subject: Follow up from landfill methane RAC meeting. Dated April 19, 2021	Oregon Department of Environmental Quality 700 NE Multnomah St. Suite 600 Portland OR 97232

Advisory committee fiscal review

DEQ appointed the Landfill Gas Emissions 2021 Rulemaking Advisory Committee to provide input on the proposed rules and for input on the fiscal and economic impact statement. As ORS 183.333 requires, DEQ asked 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; if so, then how DEQ can comply with ORS 183.540 to reduce that impact.

The committee reviewed the draft fiscal and economic impact statement and shared its comments with DEQ staff, and its findings are stated in the approved minutes dated May 20, 2021. Following the meeting, several of the committee members provided additional details on costs of the proposed rules. DEQ considered these costs and incorporated the information into the fiscal and economic impact statement.

In general, the committee found the following:

- The proposed rules will have a fiscal impact.
- The costs to landfills will increase based on the proposed rules.
- Landfill sites would most likely need to raise disposal rates.
- Local governments may need to increase franchise fees to cover the increased costs incurred by complying with the proposed rules.
- There is a wide range of positive fiscal impacts on the public from the proposed rules from reducing pollutants that exacerbate climate change. Climate change leads to health, infrastructure, and other indirect costs that the public bears (the social cost of carbon). Reduced air pollution does have a positive impact on costs associated with public health.
- The fiscal impacts would vary significantly depending on the size of facilities, whether they are closed or open, require initial capital costs, and O&M costs, including additional record keeping requirements.

The committee could not determine whether the proposed rules would have a significant adverse impact on small businesses in Oregon. The committee provided the following input:

- Smaller landfills are more likely to not have existing requirements meaning their costs would increase dramatically.
- Is there a way to generate revenue to cover the increased costs? This is particularly difficult for closed landfills with no revenue source.
- Based on the information currently shared by DEQ, the fees do not seem like they would be characterized as "significant."
- Note that the costs in the table are a per acre cost. For smaller sites to comply, the baseline cost is estimated to be $1 million. The cost for medium sized sites could be much higher.

Because some committee members stated the proposed rules may have adverse effects on small business, DEQ asked the committee members how DEQ could mitigate those adverse effects. Committee members responded with the following suggestions:

- Can grant funds be made available to help small businesses/communities offset compliance costs?
- Need incentives for renewable energy. This is an energy source that could be utilized.
- Landfills that install gas collection systems can sell back energy produced by collected gas to the grid.
- There is a potential for raising rates for specific groups of customers that are producing larger quantities of waste (to incentivize reducing waste).

Some committee members suggested that all landfill owners or operators could be considered small businesses as it generally takes less than 50 personnel to run a landfill. DEQ reviewed the owners of the landfills that currently have a permit through DEQ's air quality program. These landfills are owned by companies with parent companies that have significantly greater than 50 employees.

Some committee members also suggested that owners or operators of closed landfills are generally small businesses. DEQ agreed with this suggestion and updated the fiscal impact statement.

After considering committee input and information submitted after the committee met, DEQ determined the rules would not have a significant adverse impact on small businesses.

Additionally, following the public comment period, DEQ modified the rules to conditionally exempt small landfills from regulation. These small landfills are assumed to be owned or operated by small businesses. This modification further reduces any adverse impact on small businesses.

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 may 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. Based on input from the fiscal advisory committee members, the costs of additional permits, onsite monitoring and landfill gas control equipment, and compliance could be passed through by businesses and local governments providing products and services for such development and construction. DEQ cannot quantify the impact at this time because the available information does not indicate whether the costs would be passed on to consumers and any such estimate would be speculative.

Federal Relationship

Relationship to federal requirements

The proposed rules add requirements in addition to existing federal requirements. The proposed rules are intended to be equal to or more stringent than existing federal regulations on landfill gas emissions (NSPS XXX, NESHAP AAAA, and Emissions Guidelines subpart Cf). After adoption, DEQ will submit an equivalency request to EPA, requesting for EPA to approve these rules as a satisfactory equivalent of the NSPS and NESHAP regulations. Once the equivalency review is completed and approved, federal oversight would remain at current levels and DEQ will propose a rulemaking to repeal the adoption by reference of those federal regulations within Divisions 238 and 244.

Emission Guidelines subpart Cf are implemented in Oregon through the rules adopted into Division 236 and a State Plan approved by EPA demonstrating how the regulations are effective in Oregon. After adoption, DEQ will finalize an amended State Plan which explains how implementation of Cf will transition from Division 236 to 239. DEQ will publicly notice the amended State Plan, present it to the EQC, then submit to EPA for approval. Once approved by EPA, federal oversight would remain at current levels and DEQ will propose a rulemaking to repeal the landfill rules within Division 236.

The current federal requirements regulate non-methane organic compounds in landfill gas emissions. There are no federal regulations that require the reduction of methane emissions from landfill gas. The proposed rules protect the environment and residents of Oregon by reducing greenhouse gas emissions.

What alternatives did DEQ consider, if any?

In designing the Landfill Gas Emissions rules, DEQ considered many alternatives of the proposed rule including: different size thresholds, the requirements that would occur when the thresholds were exceeded, monitoring density, methods for calculating requirements, and reporting requirements. Input from the advisory committees in 2021 informed the design of the Landfill Gas Emissions rules. Documentation is in the rules advisory committee meeting minutes.

Land Use

Considerations

In adopting new or amended rules, ORS 197.180 and OAR 340-018-0070 require DEQ to determine whether the proposed rules significantly affect land use. If so, DEQ must explain how the proposed rules comply with statewide land-use planning goals and local acknowledged comprehensive plans.

Under OAR 660-030-0005 and OAR 340 Division 18, DEQ considers that rules affect land use if:

- The statewide land use planning goals specifically refer to the rule or program, or
- The rule or program is reasonably expected to have significant effects on:
    - Resources, objects, or areas identified in the statewide planning goals, or
    - Present or future land uses identified in acknowledge comprehensive plans

DEQ determined whether the proposed rules involve programs or actions that affect land use by reviewing its Statewide Agency Coordination plan. The plan describes the programs that DEQ determined significantly affect land use. DEQ considers that its programs specifically relate to the following statewide goals:

Goal	Title
5	Natural Resources, Scenic and Historic Areas, and Open Spaces
6	Air, Water and Land Resources Quality
11	Public Facilities and Services
16	Estuarine Resources
19	Ocean Resources

Statewide goals also specifically reference the following DEQ programs:

- Nonpoint source discharge water quality program – Goal 16
- Water quality and sewage disposal systems – Goal 16
- Water quality permits and oil spill regulations – Goal 19

Determination

DEQ determined that these proposed rules may affect land use under OAR 340-018-0030 and DEQ's State Agency Coordination Program because the proposed rules require some landfills to obtain ACDPs that were not previously required to do so, and DEQ has previously identified that the issuance of an ACDP is an action that affects land use (OAR 340-018-0030(1)(d)). Under existing DEQ rules, sources required to obtain an ACDP must provide with their applications a land use compatibility statement from the city or county planning department with jurisdiction over the landfill (OAR 340-216-0040(1)(a)(K)), which DEQ will rely upon to ensure that the landfill is compatible with the local government's comprehensive plan that has been acknowledged by the Land Conservation and Development Commission as in compliance with Statewide Planning Goals. DEQ therefore concludes that this program is covered under DEQ's State Agency Coordination Plan procedures pursuant to OAR 660-030-0060(4)(d) for assuring goal compliance and comprehensive plan compatibility for new or amended agency land use program.

EQC Prior Involvement

DEQ shares general rulemaking information with EQC through the monthly Director's Report. DEQ provided an update on the Greenhouse Gas Programs, including the landfill gas emissions rulemaking at the EQC meeting on March 26, 2021.

Advisory Committee

Background

DEQ convened the Landfill Gas Emissions 2021 Rules Advisory Committee. The committee included representatives from industry, local government, and non-profit sectors and met three times. The committee's web page is located at: https://www.oregon.gov/deq/Regulations/rulemaking/Pages/lfg2021.aspx

The committee members were:

Name	Affiliation	Representing
Michael Guebert	Metro	Local municipality, landfill owner
Patrick S. Sullivan	SCS Engineers	Technical expert
Commissioner Steve Kramer	Association of Oregon Counties	Counties
Amelia Schlusser	Green Energy Institute	Environmental/Non-profit
Jennifer Stuber	Oregon Refuse & Recycling Association	Industry
Jesse Berger	Lane County	Counties and landfill owner – Western Oregon
Damon Motz-Storey	Oregon Physicians for Social Responsibility	Human health/Non-profit
Tori Cole	Neighbors for Clean Air	Environmental/Non-profit

Meeting notifications

To notify people about the advisory committee's activities, DEQ:

- Sent GovDelivery bulletins, a free e-mail subscription service, to the following lists:
  - Landfill Gas Emissions updates
  - Air Quality Permits
  - New Source Performance Standards
  - National Emissions Standards for Hazardous Air Pollutants
- Added advisory committee announcements to DEQ's calendar of public meetings at DEQ Calendar.

Committee discussions

In addition to the recommendations described under the Statement of Fiscal and Economic Impact section above, the committee was asked to discuss existing and proposed rules and alternative compliance options. The committee provided information to DEQ on areas of the rules that could be more stringent and areas where the rules could be relaxed without impacting methane emissions. DEQ made changes to the rules based on data provided by the advisory committee where DEQ determined changes would result in similar or reduced methane emissions and increased ease of implementation, where possible.

Public Engagement

Public notice

DEQ provided notice of the proposed rulemaking and rulemaking hearing by:

- On June 15, 2021, Filing notice with the Oregon Secretary of State for publication in the July 2021 Oregon Bulletin;
- Posting the Notice, Invitation to Comment and Draft Rules on the web page for this rulemaking, located at: https://www.oregon.gov/deq/Regulations/rulemaking/Pages/lfg2021.aspx;
- Emailing approximately 20,070 interested parties on the following DEQ lists through GovDelivery:
    - Rulemaking
    - DEQ Public Notices
    - Landfill Gas Emissions Updated
    - Air Quality Permits
    - New Source Performance Standards and National Emissions Standards for Hazardous Air Pollutants
- Emailing the following key legislators required under ORS 183.335:
    - Representative Pam Marsh
    - House Speaker Tina Kotek
    - Senator Lee Beyer
    - Senate President Peter Courtney
- Emailing advisory committee members,
- Posting on the DEQ event calendar: DEQ Calendar

Public Hearing

DEQ held one public hearing. DEQ received 17 comments from four commenters at the hearing. Later sections of this document include a summary of the 17 comments received during the open public comment period, DEQ's responses, and a list of the commenters. Original comments are on file with DEQ.

Presiding Officers' Record

Hearing 1

Date	July 26, 2021
Place	Remotely held via Zoom
Start Time	1:30 p.m.
End Time	2:15 p.m.
Presiding Officer	Matt Steele

Presiding Officer

The presiding officer convened the hearing, summarized procedures for the hearing, and explained that DEQ was recording the hearing. The presiding officer asked people who wanted to present verbal comments to sign the registration list, or if attending by phone, to indicate their intent to present comments. The presiding officer advised all attending parties interested in receiving future information about the rulemaking to sign up for GovDelivery email notices.

As Oregon Administrative Rule 137-001-0030 requires, the presiding officer summarized the content of the rulemaking notice. Twenty eight people attended by teleconference or webinar. Four commented orally and no people submitted written comments at the hearing.

Summary of Public Comments and DEQ Responses

Public comment period

DEQ accepted public comment on the proposed rulemaking from June 25, 2021, until 4 p.m. on July 30, 2021.

The table below contains the names and affiliations of those who submitted written and oral comments about the proposed rules by the deadline.

List of Commenters with Comment Number				
ID	**Name**	**Affiliation**	**Comment type**	**Comment Category #'s**
1	T. Fernandez	Self	email	1
2	Joan Graves	Self	email	1
3	Linda M Eerebout Corder	Self	email	1
4	John Altshuler	Self	email	1
5	Linda Meier	Self	email	1
6	Margaret Cross	Self	email	1
7	Anonymous	Self	email	2.1, 3.2, 4.1
8	Jeff Merwin	Crook County	email, verbal	2.2, 5.1, 6, 7.1, 8
9	Chad Centola	Deschutes County	email	2.2, 6, 7.1, 9.1
10	Craig R. Geddes	Malheur County Court	email	5.1, 7.2
11	Pete Runnels	Harney County	email, verbal	2.6, 5.1, 5.2
12	Stacy Cayce	Office of State Representative Mark Owens	email	2.7, 5.1, 18
13	Shane Latimer	Douglas County	email	4.2, 5.3, 11, 2.4, 18
14	Andrea Fogue	ORRA	email	2.3, 3.1, 4.3, 6, 11, 14, 15.1, 15.2, 16, 17
15	Michael E. Van Brunt	Covanta	email	12.1, 12.2
16	John Chelminiak	Waste Management	email	2.4, 2.5, 4.2, 4.3, 6, 7.3, 7.4, 7.5, 9.2, 9.3, 9.4, 11, 12.3, 13, 14, 15, 15.3, 15.4, 18,

17	Susan Watkins	Self	email	10
18	Ilsa Perse	Self	email	10
19	State Senator Lynn Findley and State Representative Mark Owens	Self	email, verbal	2.6, 5.2
20	Jody Snider	ORRA	verbal	3.1, 4.2, 5.3, 11, 16, 17

DEQ received approximately 90 individual comments from 20 commenters by the close of the public comment period. The following table organizes comments into 18 categories with cross references to the commenter number. DEQ's response follows the summary. Original comments are on file with DEQ.

DEQ changed the proposed rules in response to comments as described in the response sections below.

Comment Category 1: Support of rules

DEQ received six comments in this category from commenters 1, 2, 3, 4, 5, and 6. DEQ has summarized comments in this category below.

> I am in favor of rule amendments to chapter 340 of the Oregon Administrative Rules. Anything we can do to reduce emissions is a benefit. Right now the Western states are facing a record heat wave. It's not the first, nor will it be the last. Emissions are directly linked to Climate Change. Please vote in favor of this amendment.
>
> I believe it is critical for Oregon to do better environmentally. This includes reducing methane gas from our landfills. We should stop being always last, compared to CA and WA states, when it comes to rules, actions and laws, that the Oregon can make to work to reduce our earth's climate crisis.
>
> **DEQ Response to Comment 1**
> DEQ believes the proposed rules are a significant step forward in addressing greenhouse gas emissions from landfills in Oregon. These proposed rules would be more stringent than California's rules, where DEQ determined that Oregon-specific conditions warranted greater stringency.

Comment Category 2: Schedule

DEQ received seven comments in this category from commenters 7, 8, 9, 14, 16, and 19. DEQ has arranged these comments into 6 subcategories.

Comment 2.1: Permit applications deadline

DEQ received one comment in this subcategory from commenter 7. DEQ has summarized comments in this category below.

The rules say that permit applications will be due by July 1, 2022. This seems like a quick turn-around if the rules aren't adopted until late September 2021. Please consider extending this deadline.

DEQ response to comment 2.1
DEQ has modified OAR 340-239-0100(1), OAR 340-239-0700(3)(e), and OAR 340-239-0700(3)(f) to include a deadline for permit applications and associated materials of October 1, 2022.

Comment 2.2: Gas Collection and Control System Installation Schedule
DEQ received two comments in this subcategory from commenter 8 and 9. DEQ has summarized comments in this category below.

As indicated in the draft proposal, dates to comply with 239-0110 are 12 months to submit the Design Plan to DEQ for review and 18 months for the Gas Collection and Control System to be operational after becoming subject to the aforementioned rule. Municipalities function on a budgetary cycle of fiscal year ending June 30, with an additional 4-6-month period for preparation and approval of the budget. The scenarios of either a GCCS upgrade or entirely new system would require procurement for a design contract including approval from DEQ followed by construction procurement as well as a fully operational system all within 18 months. EPA's 40 CFR Part 60 allows 30 months for a GCCS to become operational, which is much more feasible for affected municipal landfills.

Response to Comment 2.2:
DEQ has modified the proposed rule OAR 340-239-0110(1)(d) to require the gas collection and control system to be installed 30 months after the date that the landfill is required to comply with this rule.

Comment 2.3: Repair schedule
DEQ received one comment in this subcategory from commenter 14. DEQ has summarized comments in this category below.

Build in flexibility around the requirement to repair within 10 days for gas treatment components under positive pressure. Typical lead time for seals and contractors will often exceed this requirement and is outside of the control of the regulated party.

Response to Comment 2.3
This requirement is in alignment with the California Landfill Methane Rules (LMR) and DEQ must maintain this requirement to be at least as stringent as the California rules. DEQ did not change the proposed rules in response to this comment.

Comment 2.4: OAR 340-239-0110(1)(f)
DEQ received one comment in this subcategory from commenter 16. DEQ has summarized comments in this category below.

WM believes that a 60-day installation requirement for areas required to be controlled is too short a time requirement given necessary contracting, engineering, equipment ordering,

delivery, and installation times. WM requests this deadline be extended to 180 days for each design component.

In addition, it is not possible to update the design plan schedule and get approval each time a well or design component needs to be installed; rather a general design plan is proposed that takes into consideration the fluid nature of well installation locations and times without set schedules. Landfills can provide updates on new landfill gas system components that are installed in the previous year in the annual report.

Response to Comment 2.4
The 60-day installation requirement is consistent with federal and California rules and DEQ must maintain this requirement to be at least as stringent as the federal rules.

OAR 340-239-0700(j) provided the requirements for when an amended Design Plan must be submitted. These include the following:

> (A) At least 90 days before expanding operations to an area not covered by the previously approved Design Plan; and
>
> (B) Prior to installing, repairing, or expanding the gas collection system in a way that is not consistent with the Design Plan previously approved by DEQ.

This allows for a general Design Plan that covers potential expansions to the gas collection system without an amended Design Plan. DEQ did not change the proposed rules in response to this comment.

Comment 2.5: OAR 340-239-0700(3)(n)
DEQ received one comment in this subcategory from commenter 16. DEQ has summarized comments in this category below.

Scheduled shutdowns can be required on short notice. A 30-day notification would require an immediately needed shutdown to be delayed and could potentially cause additional problems. WM requests this notification be changed to a maximum 24-hour notice.

Response to Comment 2.5
OAR 340-239-0700(3)(n) allows for post-shutdown notification in the following scenarios:

> If the shutdown occurred due to catastrophic or other unplanned event as stipulated in OAR 340-239-0110(5), the notification must be submitted within 10 days after the shutdown.

"Unplanned events" in OAR 340-239-0110(5) include emergencies, catastrophic events, connecting new landfill gas collection system components, construction activities, and performance testing. DEQ would consider the scenarios the commenter mentioned to be an unplanned event and not subject to a 30-day notification. DEQ did not change the proposed rules in response to this comment.

Comment 2.6: Rulemaking schedule
DEQ received three comments in this subcategory from commenters 11, 12, and 19. DEQ has summarized comments in this category below.

> At the minimum, I feel Oregon DEQ needs to spend more time for the rulemaking process that was asked for and denied by AOC and industry representatives. We need more clarification and true equal comparisons to understand where and what we are being led into.
>
> We suggest DEQ extend the comment period. You need to allow for more entities to become aware of the rulemaking, assess the impacts with their staff, and provide information and input on these impacts, and for additional ideas to be considered. For example, perhaps there should be a classification of dumps that are exempt from the process if they handle <50,000 tons.
>
> Furthermore, we request DEQ hold a series of in-person public hearings in each county where the rulemaking would take effect in order to hear first-hand from public officials, employees, and landfill operators who will be directly impacted by the changes your agency is suggesting.
>
> **Response to Comment 2.6**
> DEQ agrees that receiving input from affected entities is vital to proposed rules' successful implementation. DEQ held two rulemaking advisory committee meetings and one fiscal advisory committee meeting, each with at least 14 days general public notice and individual notice sent to approximately 19,000 interested parties. These meetings were all open to the public and included a public comment period. In addition, all rulemaking materials were available on the rulemaking webpage: https://www.oregon.gov/deq/Regulations/rulemaking/Pages/lfg2021.aspx. DEQ provided the FAC a draft Fiscal Impact Statement and asked FAC members to provide any additional information they wished DEQ to consider. DEQ agreed to a FAC member request to allow (30 days) after the FAC meeting for FAC members to confer with their constituents and provide additional information for DEQ to consider. Three FAC members provided DEQ additional information. Based on FAC member and public comment received, DEQ believes that the rulemaking timeline has allowed for all potentially affected parties to be noticed and given opportunity for input.

Comment Category 3: Permitting
DEQ received two comments in this category from commenters 14 and 20. DEQ has arranged these comments into two subcategories.

Comment 3.1: Consider alternative permitting
DEQ received 2 comments in this category from commenters 14 and 20. DEQ has summarized comments in this category below.

> Consider the use of Greenhouse Gas Administrative Permits for facilities that do not trigger the construction of a gas collection and control system (GCCS) to minimize the fiscal impact of Air Contaminant Discharge Permitting and Cleaner Air Oregon. These facilities do not

have the ability to manage or treat emissions and should be excluded from traditional air permitting requirements until construction of a GCCS is triggered.

Response to Comment 3.1
DEQ has Air Contaminant Discharge Permit types that are meant to track facilities that may trigger a threshold soon and require emissions control. In the proposed rules, DEQ has maintained the Simple ACDP requirement for sites with over 200,000 tons waste-in-place. DEQ has modified the proposed rules to remove the requirement to obtain a Basic ACDP for sites with less than 200,000 tons waste-in-place.

Comment 3.2: OAR 340-216-8010
DEQ received one comment in this category from Commenter 7.

The rules also say the permit applications are due for Part A or B of OAR 340-216-8010. However, I see there are landfill permits required in OAR 340-216-8010 Part C - why are the Part C landfill permits not referenced?

Response to Comment 3.2
DEQ has modified the proposed rule language to refer to OAR 340-216-8010 Table 1 Part B and Part C to be consistent with thresholds provided in the modified proposed rules.

Comment Category 4: Federal Requirements

DEQ received 14 comments in this category from commenters 7, 13, 16, 20, and 14. DEQ has arranged these comments into 3 subcategories.

Comment 4.1: Alignment with Federal Requirements
DEQ received one comment in this category from Commenter 7.

This commenter provided potential discrepancies between the proposed rules and the federal rules. These comments and DEQ's responses are provided in the table below.

Comment 4.1 details and DEQ responses	
Comment	**Response**
The public notice states that the rules aligned with NESHAP and NSPS applicable to landfills. Presumably this includes subpart Cf emission guidelines for MSW landfills. However, the rules don't specify which landfills are required to obtain a Title V permit in alignment with emission guidelines (60.31f(c)). DEQ should consider adding applicability of part 70 operating permits to 340-239-0010.	DEQ has modified the proposed rules to include language regarding Title V operating permits. DEQ has also included recordkeeping and reporting requirements to the rules to support this applicability.
If Oregon has no closed landfills with emissions over applicability criteria of 34 or 50 mg/yr NMOC, the applicability criteria should still cover	The proposed rules address this scenario. Closed landfills that have received waste since November 1,

Comment 4.1 details and DEQ responses	
Comment	**Response**
these sources in case one is found, has an increase in emissions, or otherwise established.	1987, with a calculated methane generation rate over 664 tons/year are subject to the proposed rules, regardless of NMOC generation.
NESHAP AAAA, NSPS XXX, and the Emission Guidelines specify that a 'passive collection system' must comply with several requirements. The proposed rules establish two requirements but are not comprehensive. As passive systems are not fully addressed in the proposed rules to align with NESHAP, NSPS, and Emission Guidelines, DEQ should consider including 'passive collection' systems to the definition in 340-239-0015 to ensure they also comply with the additional federally applicable requirements (or otherwise address the additional federal requirements applicable to passive systems.	DEQ has modified the proposed rules to include an updated definition of "Gas collection system" that includes passive collection systems. DEQ has also included a new definition for "Passive collection system".
OAR 340-239-0300 refers to 239-0200 when it appears to be meaning to refer to the gas collection and control system requirements of 239-0110.	OAR 340-239-0200 provides compliance activities and incorporates requirements in OAR 340-239-0110
OAR 340-239-0700(3) goes from (d) to (f) without separately establishing (e), the waste in place report on a new line. DEQ should consider placing 340-239-0700(e) on a separate line from -0700(d)(K).	Thank you, DEQ has modified the proposed rules to address this typo.
DEQ's proposed rules establish that expanding the GCCS requires a modification to the design plan which is on a specified timeline, and that the additional parts of the system must be operational within a specific timeframe. While these amount to shorter timelines than the federal requirement of 5 years or 2 years of waste placement which requires collection/control, it is not as clear as the federal requirement. DEQ should consider explicitly stating in rule that active collection systems must collect gas from areas in which waste has been in place for a specific period of time (presumably the same or shorter timeline than the federal requirement).	DEQ proposed rules are more stringent than the federal rule on this requirement because of the shorter timeframes. The proposed rules require gas collection from all areas regardless of how long the waste has been in place, unless those areas are exempt for other reasons such as actively accepting waste or construction activities.
Emission Guidelines establish that background concentrations must be determined in association	DEQ's proposed rules do not allow methane background concentrations

Comment 4.1 details and DEQ responses	
Comment	**Response**
with surface emissions monitoring. See 40 C.F.R. part 60 subpart Cf (60.35f(a)(6)(ii). DEQ should include specifications as to how sources determine background concentrations in alignment with subpart Cf.	to be subtracted from methane emission measurement. This is more stringent than the federal rule because the federal rules allow the background concentration to be subtracted from the measured concentration.
DEQ rules require surface emissions monitoring of landfills (with a GCCS) at 25 foot intervals, much more stringent than the 30 meter intervals required by subpart AAAA. However, if no quarterly reading is over 500ppm after four consecutive readings, the spacing is allowed to go to 100 feet. This is more than 30 meters (~98.4252 feet). DEQ should adjust the spacing adjustment to equal to or less than the federal requirement.	The 25-foot spacing, followed by 100-foot spacing after four consecutive non-exceedances, in DEQ' rules align with the stringency of the California LMR. EPA approved of this spacing in California's State Plan. DEQ anticipates EPA will similarly approve the spacing in Oregon's State Plan.
DEQ rules provide sources 13 months after construction/modification/reconstruction where the Emission Guidelines provide 365 days (12 months). DEQ should consider aligning, or being more stringent than, this federal requirement.	Thank you, DEQ has modified the proposed rules to change the requirement to 12 months in alignment with the federal rule.

Comment 4.2: Federal requirements should only apply to larger landfills
DEQ received four comments in this category from commenters 13, 16, and 20. DEQ has summarized comments in this category below.

> ... the proposed rules will effectively adopt federal standards and regulations (e.g., New Source Performance Standards [NSPS] and National Emission Standards for Hazardous Air Pollutants [NESHAP]) that normally only apply to larger landfills that typically have much higher potential for methane emissions. Because Roseburg Landfill is a smaller landfill with limited potential methane emissions, these federal standards do not currently apply. Indeed, Roseburg Landfill's emissions fall well below the thresholds at which the federal standards would apply.

Response to Comment 4.2
DEQ prepared these proposed rules with the intention that they would supplant the federal rules. All federal rule requirements are included in the rules. Therefore, once approved by EPA, there will be one set of landfill gas emission rules in Oregon. This ensures that the rules are incorporating requirements that are at least as stringent as the federal rules. Applying these more stringent requirements to all landfills with gas collection and control systems will further decrease greenhouse gas emissions from these landfills. While some of the federal

requirements included do not directly address greenhouse gas emissions, the comprehensive rules will decrease confusion as to which rules apply and indirectly reduce emissions by ensuring compliance sooner. DEQ did not change the proposed rules in response to this comment.

Comment 4.3: Federal requirements - DEQ should approve alternative to EPA Method 10
DEQ received 2 comments in this category from commenters 14 and 16. DEQ has summarized comments in this category below.

On April 21, 2021, WM, along with other industry leaders, submitted a request for an alternative method of enhanced monitoring of carbon dioxide (Method 10) under federal NESHAPs regulations. This method is specific to stack testing of combustion sources and is not possible on wellheads. WM requests the alternative method to be accepted for compliance if this requirement is retained in the rule.

Response to Comment 4.3
Once EPA approves this request, DEQ will review and determine if we will approve the alternative method as well. Further, OAR 340-239-0500 allows for alternative compliance options, including for test methods. DEQ did not change the proposed rules in response to this comment.

Comment Category 5: Burden

DEQ received ten comments in this category from commenters 8, 10, 11, 12, 13, 19, and 20. DEQ has arranged these comments into 3 subcategories.

Comment 5.1: Cost Burden
DEQ received eight comments in this category from commenters 8, 10, 11, 12, 13, and 20. DEQ has summarized comments in this category below.

Crook County Landfill accepts approximately 40,000 tons of waste per year and has waste in place over approximately 65 acres of the landfill site, excluding a 4-acre asbestos pit. Based on industry actual cost of $44,000/acre for the install of a GCCS, the County could have an estimated initial capital investment of $2,860,000 and annual operating cost of $425,000. It is estimated that a 36% fee increase would need to be implemented to comply with 239-0110. A fee change of this magnitude could result in a noticeable increase in illegal dumping on public lands, which is currently a challenging issue based on the quantity and accessibility of these lands in rural Crook County. The higher rates would likely result in a loss of revenue due to reduction in tonnage from customers taking their waste to other landfills out of County. This would create a feedback loop where we would need to raise rates again to recapture the revenue lost from the reduction in tonnage.

Response to Comment 5.1
DEQ acknowledges the concerns expressed in this comment. Landfill owners may have additional costs to meet the requirements of the proposed rules. Costs to address climate change due to greenhouse gas emissions are significant and discussed in the fiscal impact statement. The proposed rules are intended to reduce greenhouse gas emissions from landfills

and thus some of the social costs of carbon. DEQ did not change the proposed rules in response to this comment.

Comment 5.2: Fiscal Analysis
DEQ received two comments in this subcategory from commenters 19 and 11. DEQ has summarized comments in this category below.

The charts you provided read "Initial Capital Costs Anticipated by Industry at $5180 for a Basic ACDP plus an annual WIP report at $4500." Those are initial costs .... Then we add the next year Annual Operation and Maintenance Costs anticipated by Industry of another $4500 for a WIP and $7651 for a Basic ACDP. Those numbers are the end of these frontier landfills. Folks CAN NOT pay those increased fees to cover these expenses.
The landfills would be looking at an initial $180 permit (one time only), a $648 yearly permit and a $151 annual Cleaner Air Oregon fee. There would also be an annual report to submit. Your materials are very confusing and do not portray a straight and direct synopsis of what's to come.
If we look at the Initial Capital Costs and Annual Operation and Maintenance Costs anticipated by the industry, does DEQ realize that approximately $10,000 assessed in new costs, passed on to an average of 10 families will increase their annual payment $1000? Even DEQ's estimated yearly fees will add around $100 to a family. But it is not clear what else will be tied to those fees.

Response to Comment 5.2
DEQ has modified the proposed rules to remove the permitting requirements for landfills with less than 200,000 tons of waste-in-place in response to these comments. The modified proposed rules exempt landfills with less than 200,000 tons of waste-in-place so long as they maintain the cover. These sites are also required to maintain records that can verify the amount of waste in place.

Comment 5.3: Closed and Inactive Landfills
DEQ received two comments in this subcategory from commenters 13 and 20. DEQ has summarized comments in this category below.

... municipalities endure long financial planning and fee-setting processes to ensure that sufficient funds are available for landfill operations and long-term closure costs. This unexpected mandate would likely add significant costs to long term closure, as it would require additional monitoring and operations during a time when the landfill is not producing revenue.

Response to Comment 5.3
DEQ's Materials Management Program already requires many landfills to maintain financial assurance for closure and post-closure costs. Further, these landfills are a potential emission source for greenhouse gases and therefore it is appropriate that they are subject to the proposed rules. Based on information from DEQ's Materials Management Program, DEQ estimates that there will be no new closed landfills that will require a permit. Two closed landfills are currently already permitted. DEQ did not change the proposed rules in response to this comment.

Comment Category 6: Waste Types

DEQ received three comments in this category from commenters 8, 14, and 16. DEQ has summarized comments in this category below.

> Crook County Landfill operates a Construction and Demolition pit (Cell 3) on the landfill property with waste covering approximately 22 of the permitted 48 acres of Cell 3. The current draft proposal includes C&D landfills or sections of landfills containing C&D material. Oregon is a state with a diverse climate with varying rainfall totals depending on the region. Crook County averages 11 inches of rainfall per year-far below the state average. The low moisture combined with the very dry waste content of C&D material makes for poor methane production. It seems reasonable to consider an exemption for this material based on geographic region or annual rainfall totals.

Response to Comment 6

The models to be used in the proposed rules that calculate methane generation allow for input of a rate constant based on the annual precipitation as well as waste type. DEQ did not change the proposed rules in response to this comment.

Comment Category 7: Design issues

DEQ received five comments in this category from commenters 8, 9, 10, and 16. DEQ has arranged these comments into 5 subcategories.

Comment 7.1: Gas Collection Requirements conflict with existing design

DEQ received 2 comments in this subcategory from commenters 8 and 9. DEQ has summarized comments in this category below.

> The lined slopes of the [landfill] cell sidewalls are constructed with 12 inches of rock to allow for drainage of moisture to the sump area. The interface of the waste lift with the rock drainage layer is a conduit for gas as it tends to travel the path of least resistance. The ability to sufficiently control that gas to meet the 500-ppm methane standard set forth in the SEM may prove to be problematic based on the inability to place wells close to a slope and the porous on-site soils used to keep gas below the waste surface. The current MSW cell (Cell 4) has an anticipated 10 years of available airspace remaining, and Cell 5 has been rough-excavated with an approximate capacity of 4 years. To maintain compliance with the rule, the DEQ approved Site Development Plan may have to be modified prior to completing waste placement in Cell 4 and placing any waste in Cell 5 to control gas at the waste/rock interface.
> ...
> The landfill site has approximately 23 acres of old trench-fill with approximately 20 feet of refuse in areas as identified through Electrical Resistivity testing. Of those 23 acres an estimated 8 acres are scheduled to be excavated for future MSW Cells as per the Landfill's Site Development Plan. Exposing waste during excavation has the potential to release methane in a means that could be difficult to control.
> ...

Current practice at the landfill for managing leachate is to recirculate during the wet months, in the winter and early spring, and then transitioning to above-ground sprinklers for evaporation during the warmer dryer months. This system seems to keep the leachate quantities at a manageable level from year to year without the need for constructing holding ponds or trucking the leachate to an off-site treatment facility. It is not yet understood on our end if this practice will create an issue with maintaining compliance; if proven to be problematic an alternative leachate management system would need to be implemented.

Response to Comment 7.1
DEQ appreciates that some designs will need to be updated to comply with the proposed rules. DEQ recommends researching gas collection systems that work with leachate collection and control system. Many landfills currently exist with leachate collection systems on the sideslope that are also capable of collecting landfill gas.

DEQ recommends landfill operators work with DEQ regional permit writers when operational or design conflicts arise so that facilities can conduct landfill operations (e.g. exposing waste for cell construction, leachate reuse) in a manner that minimizes releasing greenhouse gases. DEQ is establishing implementation guidance to assist both DEQ staff and landfill owners and operators in meeting the rule requirements. DEQ did not change the proposed rules in response to this comment.

Comment 7.2: Already monitoring methane
DEQ received one comment in this subcategory from commenter 10. DEQ has summarized comments in this category below.

Under our current permit we are already required to monitor Methane Gas. There has never been a detectable level of methane in any monitoring locations, which includes 4 methane monitoring wells, 2 buildings and the active trench. Why are we requiring additional permitting and cost to collect the same information?

Response to Comment 7.2
DEQ reviewed a site map of the landfill from the Materials Management Program. It appears the existing monitoring wells are located outside of the waste and are used as off-site migration detection wells, not in-waste methane monitoring wells. DEQ did not change the proposed rules in response to this comment.

Comment 7.3: Wind Speed Issues OAR 340-239-0700(2)(a)(C)
DEQ received one comment in this subcategory from commenter 16. DEQ has summarized comments in this category below.

Many landfills in Oregon experience wind speeds of four miles per hour or more on a regular basis. As discussed in 340-239-0800(3)(a)(D), surface testing should be performed in typical meteorological conditions that are more site-specific and seasonal. In California, almost all landfills need alternatives to this requirement, so it is unclear whether it is a useful inclusion in the Oregon rule.

Response to Comment 7.3
DEQ has modified the proposed rules to match the federal NSPS requirement to use a wind barrier when wind speeds exceed 4 miles per hour.

Comment 7.4: DEQ inspection exceedances OAR 340-239-0600(1)(a)(E), 340-239-0800(3)(a)(B)(i), 340-239-0800(3)(a)(B)(ii)
DEQ received one comment in this subcategory from commenter 16. DEQ has summarized comments in this category below.

The reference to 10 days in this rule should include DEQ inspections as well. The language should be adjusted to "An owner or operator that has shifted to annual instantaneous surface monitoring under paragraph (l)(a)(C) of this rule must return to quarterly instantaneous surface monitoring upon any exceedances of the limits specified in OAR 340-239-0200(1)(a) or upon any exceedance during a DEQ inspection that cannot be remediated in the first 10-day period." The basis for the rule should reflect the remediation of the exceedance and should not be dependent on what entity identifies the exceedance.

Response to Comment 7.4
This requirement is in alignment with the California rules. DEQ did not change the proposed rules in response to this comment.

Comment 7.5: Surface Monitoring OAR 340-239-0800(3)(a)(A)
DEQ received one comment in this subcategory from commenter 16. DEQ has summarized comments in this category below.

It is assumed that this sentence is intended to say "two to three inches" but appears to be a typo. WM requests that this section be removed as it is already adequately covered in the Federal rules or updated to reflect the intended distance for measurements consistent with the federal rule

Response to Comment 7.5
DEQ has modified the proposed rules to require the probe to be within 2 inches of the landfill surface, in compliance with federal rule.

Comment Category 8: Health and safety
DEQ received one comment in this category from commenter 8. DEQ has summarized comments in this category below.

The 22-acre Cell 3 construction and demolition pit contains non-friable asbestos. Due to the very low moisture content in the waste, there is the potential risk of asbestos exposure during both the installation of wells and recompaction of the waste created during drilling. Both public and commercial haulers unload construction and demolition material at the active working face.

Exposing construction and demolition material to oxygen by either drilling or through vacuum poses a risk of landfill fire.

Response to Comment 8
DEQ appreciates that health and safety concerns presented and risks associated with landfill operations. DEQ does not believe that compliance with the proposed rules will exacerbate those risks. DEQ encourages landfill owners and operators to continue to construct and operate landfills in a way that protects the health and safety of workers and surrounding communities. DEQ did not change the proposed rules in response to this comment.

Comment Category 9: Clarifications

DEQ received four comments in this category from commenters 9 and 16. DEQ has arranged these comments into 4 subcategories.

Comment 9.1: Definitions

DEQ received 1 comment in this subcategory from commenter 9. DEQ has summarized comments in this category below.

340-239-0015 (27) of the draft rules defines an Open Flare as an open combustor without an enclosure or shroud. While there is a definition for an Enclosed Combustor, there is no definition for enclosure or shroud and this makes it unclear what the status of a flare equipped with a shroud would be under the draft Division 239 rules.

Response to Comment 9.1
While DEQ appreciates this comment and endeavors to write clear rules, these definitions are from the federal rule which does not include a definition of shroud or enclosure. To prevent future inconsistencies with the federal rule, DEQ did not include the requested definitions in the proposed rules. A flare equipped with a shroud would be considered an enclosed flare. DEQ did not change the proposed rules in response to this comment.

Comment 9.2: 15-year post-closure period OAR 340-239-0400(1)(a)

DEQ received one comment in this subcategory from commenter 16. DEQ has summarized comments in this category below.

WM requests that time the landfill started GCCS operation be included in the 15-year minimum period for removing the gas collection and control system if methane rates decline. The current language says a 15-year minimum is required since the implementation of this rule, which could be interpreted as excluding GCCS operation before this rule took effect. Landfills that already have GCCCs should get credit for the years they have already operated them.

Response to Comment 9.2
OAR 340-239-0400(1)(a) states:

> When a landfill owner or operator has installed a gas collection and control system pursuant to OAR 340-239-0105, the owner or operator may permanently shutdown and remove the system only as provided in this rule.
>
> (1) The gas collection and control system at a closed landfill, or at a closed area of a landfill, may be capped or removed provided all of the following requirements are met:

(a) The gas collection and control system was in operation for at least 15-years, unless the owner or operator can demonstrate to the satisfaction of DEQ that due to declining methane rates the owner or operator of the landfill will be unable to operate the gas collection and control system for a 15-year period.

DEQ's intention is that the 15-year post-closure period begins at closure of the landfill or area, not rule adoption. DEQ did not change the proposed rules in response to this comment.

Comment 9.3: Liner installation OAR 340-239-0110(2)(e)(B)
DEQ received one comment in this subcategory from commenter 16. DEQ has summarized comments in this category below.

WM would like clarification or removal of this section and how it pertains to old unlined cells that were not required to be lined at the time of their construction. WM believes that the presence of a liner does not an effect on gas collection or treatment requirements, therefore, WM request that this requirement be removed or clarified.

Response to Comment 9.3
Since this is a federal requirement, DEQ asked the EPA for clarification. According to EPA, the "The liner is meant to make sure gas only has one way to flow: through the passive system. Active collection would be the better choice for a landfill that doesn't have liners, since the rule requires the design to minimize off-site migration of gas rather than use of liners.". To ensure the new Oregon rules meet federal requirements, DEQ has modified the proposed rules so that OAR 340-239-0110(2)(e)(B) only applies to municipal solid waste landfills with a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m3).

Comment 9.4: Recordkeeping OAR 340-239-0700(2)(a)(N)
DEQ received one comment in this subcategory from commenter 16. DEQ has summarized comments in this category below.

"The reading in the subsequent month whether or not the second reading is an exceedance" is confusing, and WM would like clarity. Is DEQ requiring the reading result itself, or just noting if the second reading was an exceedance? Regardless, this requirement is not in the LMR, is not supported by documentation provided by DEQ, and should, therefore, not be included in this rule.

Response to Comment 9.4
This requirement asks for the actual reading, whether or not it is an exceedance, to be submitted. This is so that DEQ can track trends in exceedances for potential future rule modifications. DEQ did not change the proposed rules in response to this comment.

Comment Category 10: Enforcement

DEQ received two comments in this category from commenters 17 and 18. DEQ has summarized comments in this category below.

Regulations are all fine and dandy, but an agency that is not equipped to enforce the regulations, with really stiff consequences for not meeting the standards, is not doing its job.

Tighter regulations are needed, but regulations with no ability to force polluters comply are meaningless.

Response to Comment 10
DEQ appreciates the commenters' concern. DEQ has included proposed changes to enforcement rules in Division 12 that address compliance and enforcement of the proposed landfill gas rules in Division 239. DEQ did not change the proposed rules in response to this comment.

Comment Category 11: Executive Order EO-04

DEQ received five comments in this category from commenters 13, 14, 16, and 20. DEQ has summarized comments in this category below.

Governor Brown signed Executive Order No. 20-04 on March 10, 2020, directing the Oregon Department of Environmental Quality (DEQ) to "take actions necessary to reduce methane gas emissions from landfills, as defined in ORS 459.005(14), that are aligned with the most stringent standards and requirements for reducing methane gas emissions from landfills adopted among the states having a boundary with Oregon."

DEQ has pushed beyond that directive to expand the authority beyond those of the Landfill Methane Rules in California. ORRA has concerns that the rules as proposed will be disproportionately detrimental to landfills in Oregon and will directly result in leakage into states that are not as stringently regulated, increasing greenhouse gas emissions through transportation. The rule as proposed conflicts with the California Landfill Methane Rule (LMR) in the following ways:

Oregon Proposed Landfill Gas Emissions Rule	California Landfill Methane Rule
Applies to all landfills	Applies to Municipal Solid WasteLandfills
Closure year cut off: 34 years prior to rule promulgation	Closure year cut off: 32 years prior to rule promulgation
Waste in Place >/= 200,000 Tons	Waste in Place >/= 450,000 Tons
Methane generation threshold when surface emission monitoring (SEM) can no longer be used to defer gas collection and control systems (GCCS)	No methane generation limit on use of SEM exemption
Allows for certain uses of open flares	Does not allow open flares after a certain period
Report SEM monitoring above 100 ppm	SEM monitoring above 200 ppm
Annual waste characteristics, visual inspection, methane generation report	Not required under LMR
Requires monitoring of gas well temp and O2	Not required under LMR

Wellhead temperature limit of 145 dF and additional monitoring and corrective action if exceeded	Not required under LMR
Requires SEM monitoring after GCCS removal	Not required under LMR
Creates permitting requirements for landfills	Not required under LMR
Requires permitting when new wells added to GCCS	Not required under LMR
Additional corrective action requirements for wells that cannot be corrected in 15 days	Not required under LMR
CO monitoring for wells over 170 dF	Not required under LMR
Semi-annual reporting	Annual reporting
Liquids addition reporting	Not required under LMR

Response to Comment 11
DEQ appreciates your comment. DEQ considers the Executive Order a starting point for this rulemaking. DEQ has the authority to propose greater stringency where the agency believes Oregon-specific conditions warrant or where opportunities exist to further reduce greenhouse gas emissions. In response to comments received, DEQ has modified the proposed rules to exempt landfills with less than 200,000 tons of waste-in-place if certain recordkeeping and operational requirements are met.

Comment Category 12: Methane Generation

DEQ received four comments in this category from commenters 15 and 16. DEQ has divided this comment category into 3 subcategories.

Comment 12.1: Methane calculations and measurement
DEQ received 3 comments in this category from commenter 15. DEQ has summarized comments in this category below.

The Oregon DEQ should incorporate the latest science in assessing the climate impacts of methane... To truly bring the consideration of methane emissions in Oregon with the latest science and climate policy leaders, Oregon should adopt the 20-year GWP. Methane is 84-86 times more potent than CO_2 over a 20-year period, a time frame now used by CA, NY, and NJ to assess policies aimed at reducing methane. This approach follows years of calls from the scientific community for a greater focus on climate pollutants like methane owing to their potency and other differences relative to CO_2.

The DEQ should update its analysis on landfill emissions and gas collection efficiency based on updated data... The persistent reliance on old data undermines effective policy development. The defaults and assumptions underlying these models (e.g. landfill gas collection efficiencies, waste methane generation potentials, soil oxidation rates, decay rate constants) need to be updated so that the models reflect measurements. These changes will allow for better quantification of the GHG benefits of policy actions taken to divert wastes from landfills, including composting, anaerobic digestion, recycling, and energy recovery.

The DEQ should incorporate direct measurement of landfill methane to allow for hotspot identification and subsequent remediation... Relative to when California began development of the landfill early action measure in 2008, techniques are now available for the direct measurement of landfill methane emissions. In addition to studies already completed using aircraft, drone technology is enabling more-cost effective and frequent direct measurement of emissions.

Response to Comment 12.1
DEQ appreciates your comment and agrees with your assessment of the current science. However, incorporation of these updated calculations would not change the proposed rules' requirements or affect facilities' compliance. As EPA reviews and approves alternative measurement methods, DEQ will review potential new methods and propose rule revisions as needed. DEQ did not change the proposed rules in response to this comment.

Comment 12.2: Organics Diversion
DEQ received one comment in this category from commenter 15. DEQ has summarized comments in this category below.

Oregon should consider regulations that encourage diversion of organics from landfills in addition to "tailpipe" type controls... The strongest tool for reducing methane emissions is not collecting more gas, but diverting organics from landfills through prevention, recycling, anaerobic digestion, composting, and energy recovery. The benefits are clearer than ever: correcting Oregon's GHG inventory to reflect direct measurements of landfill emissions which find double the emissions of previous estimates would place landfills as the leading source of methane in the state.

Response to Comment 12.2
DEQ's Material's Management Program is reviewing methods for minimizing organics to landfills. DEQ's Air Quality Division coordinated with Materials Management during this rulemaking and will continue to do so as DEQ implements the rules, providing EQC adopts the proposed rules. DEQ did not change the proposed rules in response to this comment.

Comment 12.3: Methane generation rate for GCCS shut-down OAR 340-239-0400(1)(b)
DEQ received one comment in this category from commenter 15. DEQ has summarized comments in this category below.

Methane generation of less than 664 metric tons is equivalent to roughly 135 standard cubic feet per minute (scfm) of landfill gas generation. This threshold is used as an entrance requirement for the draft rule, similar to the California LMR. However, it is also proposed as an exit criterion before a landfill gas system can be taken off-line. The California LMR does not have this exit requirement. The effects associated with this additional provision will result in all landfills being required to operate a gas collection and control system (GCCS) for decades longer. This in turn will drive significant additional cost for landfills that will have already spent substantial dollars and achieved many years of methane reductions. Further, this provision will result in millions of additional dollars spent in post-closure costs, much of which has not been accounted for in current long-term closure funding. These costs will be an enormous, new, unforeseen burden, particularly for smaller municipal landfills that

have closed and are no longer generating revenue. WM requests that the exit criteria be removed from the proposed rule.

Response to Comment 12.3
The gas generation requirement is similar to the federal requirement for capping, removing or decommissioning a gas collection and control system and will help reduce greenhouse gas emissions from closed landfills. DEQ's rules must be at least as stringent as federal requirements. DEQ did not change the proposed rules in response to this comment.

Comment Category 13: Recordkeeping

DEQ received three comments in this category from commenter 16. DEQ has divided this comment category into three subcategories.

Comment 13.1: SEM recordkeeping OAR 340-239-0700(2)(a)(C)

DEQ received one comment in this category from commenter 16. DEQ has summarized comments in this category below.

Recordkeeping requirements in the California LMR is required only for instantaneous surface readings of 200 ppmv methane or greater. The proposed lower threshold is not warranted, increases recordkeeping and reporting burden without reducing methane emissions. WM requests this requirement to match the most stringent bordering state policy of 200 ppmv, not 100 ppmv as written. This would also need to be updated at all points in LFG 2021 that note the 100 ppmv limit, such as 340-239-0700(3)(c)(A).

Response to Comment 13.1:
DEQ chose to include a 100 ppmv recordkeeping requirement to allow DEQ to better track surface emissions that are close to, but not yet exceeding, the 200 ppmv requirement. This will help with modeling of changes in greenhouse gas emissions. To minimize reporting burdens, DEQ will accept data in spreadsheet form such as that recorded by data loggers. DEQ did not change the proposed rules in response to this comment.

Comment 13.2: Recordkeeping of solid waste excavation and movement OAR 340-239-0700(2)(a)(J)(iii)

DEQ received one comment in this category from commenter 16. DEQ has summarized comments in this category below.

Requiring documentation every time solid waste is excavated or moved would be logistically and administratively problematic. The nature of landfill operation requires continuous excavation and moving of solid waste. The California LMR requires notification only when waste that has already been covered (e.g., by intermediate cover or final cover systems) is exposed through excavation.

Response to Comment 13.2:
The referenced rule is directly from the California LMR. DEQ intends for the rules to require notification only when wastes that have already been covered are exposed through excavation. DEQ did not change the proposed rules in response to this comment.

Comment 13.3: Recordkeeping of component leaks above 250 ppm 340-239-0700(2)(a)(S)
DEQ received one comment in this category from commenter 16. DEQ has summarized comments in this category below.

> WM does not understand the origin of the 250 ppmv limit in this regulation, as it refers to OAR 340-239-0600(2)(c) which does not mention 250 ppmv. Recordkeeping is already required at 100 ppmv per LFG 2021. WM requests this requirement be removed, as it also is not found in the LMR.
>
> **Response to Comment 13.3:**
> See response to comment 13.1. DEQ has modified OAR 340-239-0600(2)(c) to refer to this recordkeeping requirement.

Comment Category 14: Reporting

DEQ received two comments in this category from commenters 14 and 16. DEQ has divided this comment category into 2 subcategories.

Comment 14.1: Flexibility to Design Plan and "As-Built" report
DEQ received one comment in this category from commenter 14. DEQ has summarized comments in this category below.

> ORRA would like to propose the following variations for DEQ's consideration based on our knowledge of operating and managing landfills in the state of Oregon:
> ...
> Add flexibility to adjust the Gas System Design Plan and submit "As-Built" reports to show necessary field adjustments.
>
> **Response to Comment 14.1:**
> OAR 340-239-210 provides requirements for Notice of Construction and Notice of Completion. Please meet these requirements for submitting plans and as-built reports. DEQ did not change the proposed rules in response to this comment.

Comment 14.2: Semi-Annual Reporting OAR 340-239-0700(3)(c) and (d)
DEQ received one comment in this category from commenter 16. DEQ has summarized comments in this category below.

> WM believes that Annual reporting is sufficient to determine compliance with the rule. Annual reporting is the frequency chosen in the California LMR. The proposed rule indicates that the reporting is to be performed semi-annually. This only creates substantially more documentation with no evidence that it will reduce emissions. WM requests the frequency to be adjusted to annual be consistent with the California LMR.
>
> **Response to Comment 14.2:**
> The semi-annual reporting requirements are from the federal rules that DEQ has incorporated into these proposed landfill gas emission rules. DEQ did not change the proposed rules in response to this comment.

Comment Category 15: Surface Emission Monitoring

DEQ received six comments in this category from commenters 14 and 16. DEQ has divided this comment category into 4 subcategories.

Comment 15.1: Integrated monitoring spacing

DEQ received one comment in this category from commenter 14. DEQ has summarized comments in this category below.

> Based on information from California, the spacing of integrated testing should be reduced to 30 meters after 4 quarters with results below 25 ppm.
>
> **Response to Comment 15.1:**
> OAR 340-239-0800(3)(a)(A)(i) [Surface Emissions Monitoring Procedures Monitoring area] states the following, which allows for larger grid sizes after four consecutive quarters of no exceedances, including the 25 ppm integrated testing requirements.
>
> > (i) If the owner or operator has no exceedances of the limits specified in OAR 340-239-0200 after any four consecutive quarterly monitoring periods, the walking pattern spacing may be increased to 100-foot intervals. The owner or operator must return to a 25-foot spacing interval upon any exceedances of the limits specified in OAR 340-239-0200 that cannot be remediated within 10 days or upon any exceedances detected during a DEQ inspection...
>
> DEQ did not change the proposed rules in response to this comment.

Comment 15.2: Penetration Monitoring

DEQ received one comment in this category from commenter 14. DEQ has summarized comments in this category below.

> Decrease penetration monitoring from quarterly to annually.
>
> **Response to Comment 15.2:**
> OAR 340-239-0800(3)(b)(E) allows for landfills that would not otherwise be regulated under the federal rules to conduct penetration monitoring annually following no methane detections for four consecutive quarters. DEQ did not change the proposed rules in response to this comment.

Comment 15.3: SEM exceedances

DEQ received one comment in this category from commenter 16. DEQ has summarized comments in this category below.

> WM requests upon a third monitoring exceedance that the owner or operator have flexibility to expand the current collection system as well as the potential of alternative remedies and timelines. The current language is too specific and does not take into consideration other valid alternative methods for correcting an exceedance beyond expanding the collection system nor does it allow for additional time when there are reasonable delays in completing the construction.

Response to Comment 15.3:
The proposed rules allow for two prior exceedances, and two opportunities to remedy the exceedances prior to third exceedance, prior to requiring expansion of the collection and control system. The proposed rules also allow for alternative compliance options. DEQ did not change the proposed rules in response to this comment.

Comment 15.4: SEM grid OAR 340-239-0800(3)(b)(C)
DEQ received one comment in this category from commenter 16. DEQ has summarized comments in this category below.

The reference to OAR 340-239-0105(5)(b) is confusing, as the 100 ppmv limit is referred to in this regulation but the referenced rule has a limit of 200 ppmv. In addition, the five-foot grid monitoring required here is also not present at all in LMR. WM requests that the requirements covered by this section be made consistent with the California LMR.

Response to Comment 15.4:
The 5-foot monitoring grid is an Oregon-specific addition. This smaller grid is intended to discover the source of leaks that do not exceed the threshold to ensure there is not a hot spot that is missed in the 25-foot grid. DEQ did not change the proposed rules in response to this comment.

Comment Category 16: Unintended Consequences

DEQ received two comments in this category from commenters 14 and 20. DEQ has summarized comments in this category below.

DEQ has pushed beyond that directive to expand the authority beyond those of the Landfill Methane Rules in California. ORRA has concerns that the rules as proposed will be disproportionately detrimental to landfills in Oregon and will directly result in leakage into states that are not as stringently regulated, increasing greenhouse gas emissions through transportation.

Response to Comment 16:
DEQ appreciates commenters' concerns about GHGs from transportation of waste across state lines, but DEQ is not aware of CA waste being transported to other states' disposal systems in response to 10 years of implementation of the CA rules. DEQ could investigate potential leakage during the 5-year review of these proposed rules. DEQ did not change the proposed rules in response to this comment.

Comment Category 17: Incentivize Renewable Energy

DEQ received two comments in this category from commenters 14 and 20. DEQ has summarized comments in this category below.

ORRA asserts that landfills with GCCS are a significant source of renewable energy and we encourage DEQ to promote sustainable energy sources throughout Oregon by:

- Incentives to renewable energy projects and pricing to utilize available resources to their highest and best use.
- Credit landfills that recover LFG to energy to promote sustainable energy markets around Oregon – including rural areas.
- Provide funds to construct infrastructure to support renewable energy projects.
- Evaluate carbon offsets for landfill carbon sequestration, composting, and renewable energy projects.

Response to Comment 17:
DEQ appreciates the recommendation to incentivize renewable energy in Oregon and renewable energy created from landfill gas. One current program that incentives the use of biofuels is DEQ's Clean Fuels Program. DEQ also recently released draft rules to establish a Climate Protection Program (CPP) to set limits on greenhouse gas emissions from the use of fossil fuels, including transportation fuels and other liquid and gaseous fuels, such as natural gas, as well as certain other emissions at large stationary sources. There is also a voluntary CPP compliance option, community climate investments, that are aimed at accelerating the transition of residential, commercial, industrial, and transportation-related uses of fossil fuels to lower carbon sources of energy, which could include renewable energy projects. Emissions associated with biomass derived fuels have no compliance obligations in the draft CPP rules. Commenters may stay apprised of CPP rulemaking here (https://www.oregon.gov/deq/Regulations/rulemaking/Pages/rghgcr2021.aspx). DEQ did not change the proposed rules in response to this comment.

Comment Category 18: Support of other commenters

DEQ received three comments in this category from commenters 12, 13 and 16. DEQ has summarized comments in this category below.

Response to Comment 18:
Thank you for support of other commenters. DEQ acknowledges the shared interests and stated support among several commenters.

Implementation

Notification

The proposed rules would become effective upon filing on approximately Sept. 30, 2021. DEQ would notify affected parties by:

- Email to new and existing regulated facility representatives
- Follow up mail with information request to new and existing regulated facility representatives
- Prepare a website with relevant requirements and guidance document
- Publish the adopted rules in the Oregon Bulletin

Compliance and enforcement

Affected parties are landfill owners and operators. The proposed rule changes include amendments to Division 12. DEQ staff will coordinate with the Office of Compliance and Enforcement to implement the changes.

Reporting

Landfill owners and operators will be required to submit semiannual and/or annual reports regarding varying landfill operations based on the landfill size and methane generation potential.

Training

DEQ will be providing technical assistance in the form of a webpage to affected parties to implement the many provisions of this rulemaking including:

- Determining permit type and requirements
- Estimating waste-in-place
- Calculating methane generation potential
- Timelines

Five-Year Review

Requirement

Oregon law requires DEQ to review new rules within five years after EQC adopts them. The law also exempts some rules from review. DEQ determined whether the rules described in this report are subject to the five-year review. DEQ based its analysis on the law in effect when EQC adopted these rules.

Exemption from five-year rule review

The Administrative Procedures Act exempts some of the proposed rules from the five-year review because the proposed rules would:

- Amend or repeal an existing rule. ORS 183.405(4).

Five-year rule review required

No later than Sept. 30, 2026, DEQ will review the newly adopted rules for which ORS 183.405 (1) requires review to determine whether:

- The rule has had the intended effect
- The anticipated fiscal impact of the rule was underestimated or overestimated
- Subsequent changes in the law require that the rule be repealed or amended
- There is continued need for the rule.

Rules Subject to Five Year Review				
340-239-0010	340-239-0015	340-239-0100	340-239-0105	340-239-0110
340-239-200	340-239-300	340-239-400	340-239-500	340-239-600
340-239-0700	340-239-0800			

DEQ will use available information to comply with the review requirement allowed under ORS 183.405 (2).

DEQ will provide the five-year rule review report to the advisory committee to comply with ORS 183.405 (3).

Accessibility Information

You may review copies of all documents referenced in this announcement at:
Oregon Department of Environmental Quality
700 NE Multnomah St., Ste. 600
Portland, OR, 97232

To schedule a review of all websites and documents referenced in this announcement, call Heather Kuoppamaki, DEQ Headquarters, 503-407-7596 (800-452-4011, ext. 5622 toll-free in Oregon).

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.

State of Oregon Department of Environmental Quality

Draft Rules: Division 239

Landfill Gas Emissions 2021

Note: *These are all new rules so there are no redline changes shown in the text*

Oregon Department of Environmental Quality
Division 239

340-239-0010 Applicability

(1) This division applies in all areas of the state and to all new landfills and all landfills that have received solid waste after November 8, 1987, excluding those sources located on either tribal or federal lands that are not subject to regulation by DEQ and except as provided in OAR 340-239-0010(2).

(2) Subject to the requirements in this division and OAR 340-200-0010(3), LRAPA is designated by the EQC to implement the rules in this division within its area of jurisdiction.

(3) Exemptions. This division does not apply to the following landfills. Landfills claiming exemption under subsection (b) or (c), below, must maintain records showing how the exemption is met and provide the records to DEQ upon request not later than a reasonable date established by DEQ.

(a) Landfills that are regulated under the Resource Conservation and Recovery Act (RCRA) Subtitle C or the Comprehensive Environmental Response, Compensation and Liability Act 42, U.S.C, Chapter 103 (Promulgated 12/11/80; Amended 10/17/86).

(b) Landfills that receive only nondecomposable wastes.

(c) Landfills with less than 200,000 tons of waste-in-place except that they must comply with section (4).

(4) Landfills with less than 200,000 tons of waste-in-place must maintain the landfill cover in all areas of the landfill so as to minimize landfill gas emissions.

Statutory/Other Authority: ORS 468.020, 468A.025 & 468A.135
Statutes/Other Implemented: ORS 468A.025 & 468A.135

340-239-0015 Definitions
The definitions in OAR 340-200-0020, 340-218-0030 and this rule apply to this division. If the same term is defined in this rule and 340-200-0020 or 340-218-0030, the definition in this rule applies to this division.

(1) "Active landfill" means a landfill in which solid waste is being placed or a landfill that is planned to accept waste in the future.

(2) "Bioreactor" means a landfill or portion of a landfill where any liquid other than leachate (leachate includes landfill gas condensate) is added in a controlled fashion into the waste mass (often in combination with recirculating leachate) to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste.

(3) "Component" means any equipment that is part of the gas collection and control system and that contains landfill gas including, but not limited to, wells, pipes, flanges, fittings, valves, flame arrestors, knock-out drums, sampling ports, blowers, compressors, or connectors.

(4) "Component leak" means the concentration of methane measured one half of an inch or less from a component source that exceeds 500 parts per million by volume (ppmv), other than nonrepeatable, momentary readings. Measurements from any vault must be taken within three inches above the surface of the vault exposed to the atmosphere.

(5) "Closed landfill" means that a landfill is no longer accepting solid waste for disposal and has documentation that the closure was conducted in accordance with the applicable statutes, regulations, and local ordinances in effect at the time of closure.

(6) "Continuous operation" means that the gas collection and control system is operated continuously, the existing gas collection wells are operating under vacuum while maintaining landfill gas flow, and the collected landfill gas is processed by a gas control system 24 hours per day.

(7) "Controlled landfill" means any landfill at which collection and control systems are required under this division. The landfill is considered controlled at the time a Collection and Control System Design Plan is required to comply with OAR 340-239-100(6) or OAR 340-239-100(7).

(8) "Corrective action analysis" means a description of all reasonable interim and long-term measures, if any, that are available, and an explanation of why the selected corrective action(s) is/are the best alternative(s), including, but not limited to, considerations of cost effectiveness, technical feasibility, safety, and secondary impacts.

(9) "Decomposable solid waste" means any solid waste that is not nondecomposable solid waste.

(10) "Destruction efficiency" means a measure of the ability of a gas control device to combust, transform, or otherwise prevent emissions of methane from entering the atmosphere.

(11) “Enclosed combustor” means an enclosed flare, steam generating boiler, internal combustion engine, or gas turbine.

(12) “Energy recovery device” means any combustion device that uses landfill gas to recover energy in the form of steam or electricity, including, but not limited to, gas turbines, internal combustion engines, boilers, and boiler-to-steam turbine systems.

(13) “Gas control device” means any device used to dispose of or treat collected landfill gas, including, but not limited to, enclosed flares, internal combustion engines, boilers and boiler-to-steam turbine systems, fuel cells, and gas turbines.

(14) “Gas collection system” means any system that employs various gas collection wells and connected piping, gas mover equipment, or any system that is a passive collection system.

(15) “Gas control system” means any system that disposes of or treats collected landfill gas by one or more of the following means: combustion, gas treatment for subsequent sale, or sale for processing offsite, including for transportation fuel and injection into the natural gas pipeline.

(16) “Gas mover equipment” means the equipment (i.e., fan, blower, compressor) used to transport landfill gas through the header system.

(17) “Gas mover system” includes all of the gas mover equipment,

(18) “Gas collection and control system” means any system consisting of a Gas Collection System and a Gas Control System.

(19) “Inactive area” means a separate area of a landfill in which solid waste is no longer being placed. The area must be separated from other areas of the landfill to ensure that the landfill gas does not migrate between active and inactive areas.

(20) “Inactive landfill” means a landfill that is no longer accepting solid waste for disposal, or can document that the landfill is no longer receiving solid waste.

(21) “Landfill” means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under 40 C.F.R. § 257.2.

(22) “Landfill gas” means any untreated, raw gas derived through a natural process from the decomposition of organic waste deposited in a landfill, from the evolution of volatile species in the waste, or from chemical reactions of substances in the waste.

(23) “Landfill surface” means the area of the landfill under which decomposable solid waste has been placed, excluding the working face.

(24) “Leachate recirculation” means the practice of taking the leachate collected from the landfill and reapplying it to the landfill by any of one of a variety of methods, including pre-wetting of the waste, direct discharge into the working face, spraying, infiltration ponds, vertical injection wells, horizontal gravity distribution systems, and pressure distribution systems.

(25) “Nondecomposable solid waste” means solid waste that is biologically and chemically inactive and does not form landfill gas. Examples include, but are not limited to, earth, rock, concrete asphalt paving fragments, uncontaminated concrete (including fiberglass or steel reinforcing rods embedded in the concrete), brick, glass, ceramics, clay products, inert slag, asbestos-containing waste, waste tire chips, and demolition materials containing minor amounts (less than 10 percent by volume) of wood and metals.

(26) “Nonrepeatable, Momentary Readings” means indications of the presence of methane, which persist for less than five seconds and do not recur when the sampling probe of a portable gas detector is placed in the same location.

(27) “Open Flare” means an open combustor without enclosure or shroud.

(28) “Operator” means any person that:

(a) Operates the landfill or controls the operations of the landfill;

(b) Is responsible for complying with any federal, state, or local requirements relating to methane emissions from real property used for landfill purposes and subject to this division;

(c) Operates any stationary equipment for the collection of landfill gas;

(d) Purchases landfill gas from an owner or operator of a landfill and operates any stationary equipment for the treatment of landfill gas; or

(e) Purchases untreated landfill gas from an owner or operator of a landfill and operates any stationary equipment for the combustion of landfill gas.

(29) “Owner” means any person that:

(a) Holds title to the real property on which the landfill is located, including but not limited to title held by joint tenancy, tenancy in common, community property, life estate, estate for years, lease, sublease, or assignment, except title held solely as security for a debt such as mortgage;

(b) Is responsible for complying with any federal, state, or local requirements relating to methane emissions from real property used for landfill purposes and subject to this rule;

(c) Owns any stationary equipment for the collection of landfill gas;

(d) Purchases the landfill gas from an owner or operator of a landfill and owns any stationary equipment for the treatment of landfill gas; or

(e) Purchases untreated landfill gas from an owner or operator of a landfill and owns any stationary equipment for the combustion of landfill gas.

(30) “Passive collection system” means a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment.

(31) “Ppmv” means parts per million by volume

(32) “Professional engineer” means an individual who is registered in Oregon and holds a valid certificate to practice engineering in Oregon as provided under ORS 672.002 to 672.325.

(33) “Remedial Action” means the definition provided under ORS 465.200.

(34) “Root cause analysis” means an assessment conducted through a process of investigation to determine the primary cause, and any other contributing causes, of positive pressure at a wellhead.

(35) “Scfm” means standard cubic feet per minute

(36) “SEM” means Surface Emission Monitoring

(37) “Solid waste” means all decomposable and nondecomposable solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial waste, manure, vegetable or animal solid and semisolid wastes, sludge, and other discarded solid and semisolid wastes. Solid waste also includes any material meeting the definition of solid waste in 40 C.F.R. § 60.751.

(38) “Treatment system” means a system that filters, de-waters, and compresses landfill gas.

(39) “Waste-in-Place” means the total amount of solid waste placed in the landfill in tons. The solid waste density is assumed to be 1,300 pounds per cubic yard and the decomposable fraction is assumed to be 70 percent by weight unless DEQ approves alternative values.

(40) “Well raising” means a landfill activity where an existing gas collection well is temporarily disconnected from a vacuum source, and the nonperforated pipe attached to the well is extended vertically to allow the addition of a new layer of solid waste or the final cover; or is extended horizontally to allow the horizontal extension of an existing layer of solid waste or cover material. The extended pipe (well extension) is then reconnected in order to continue collecting gas from that well.

(41) “Working face” means the open area where solid waste is deposited daily and compacted by landfill equipment.

Statutory/Other Authority: ORS 468.020 & 468A.025
Statutes/Other Implemented: ORS 468A.025

340-239-0100 Landfills with Greater Than or Equal to 200,000 Tons of Waste-in-Place
(1) By October 1, 2022 the owner or operator of a landfill listed in Table 1 Part B or C of OAR 340-216-8010, having greater than 200,000 tons (181,000 metric tons) of waste-in-place, must submit to DEQ an administratively complete permit application, pursuant to OAR chapter 340, division 216, an initial Waste-in-Place Report, pursuant to OAR 340-239-0700(3)(e), and a Methane Generation Rate Report, pursuant to OAR 340-239-0700(3)(f).

(2) The owner or operator of an existing landfill that does not yet have 200,000 tons of waste-in-place must, may not accept solid waste in excess of 200,000 tons of waste-in-place without a permit issued pursuant to OAR 340-216, and submission of an initial Waste-in Place Report, pursuant to OAR 340-239-0700(3)(e) and a Methane Generation Rate Report, pursuant to OAR 340-239-0700(3)(f). Once the landfill reaches a size greater than or equal to 200,000 tons of waste-in-place, the owner or operator is subject to OAR 340-239-0100.

(3) The owner or operator of a proposed new landfill that is designed to receive greater than or equal to 200,000 tons of waste in the first year must submit an administratively complete permit application, pursuant to OAR chapter 340, division 216, prior to receiving any waste. The owner or operator of a new landfill also must submit to DEQ, no later than January 30 after the first calendar year in which the landfill initially accepted waste, an initial Waste-in-Place Report, pursuant to OAR 340-239-0700(3)(e), and a Methane Generation Rate Report, pursuant to OAR 340-239-0700(3)(f).

(4) The owner or operator of a landfill having greater than or equal to 200,000 tons of waste-in-place must submit an annual Waste-in-Place Report to DEQ pursuant to OAR 340-239-0700(3)(e) and an annual Methane Generation Rate Report, pursuant to OAR 340-239-0700(3)(f), until the owner or operator submits a Closure Notification pursuant to OAR 340-239-0700(3)(a). The initial Waste-in-Place Report and Methane Generation Rate Report submitted by a landfill pursuant to sections (1), (2) or (3) shall satisfy this requirement for the initial year it applies to a landfill.

(5) If the calculated methane generation rate reported by the owner or operator of a landfill according to section (1), (2) (3), or (4) of this rule is less than 664 metric tons (732 tons) per year, the owner or operator must:

(a) If the landfill is active:

(A) Recalculate the methane generation rate annually using the procedures specified in OAR 340-239-0800(2);

(B) Submit an annual Methane Generation Rate Report to DEQ pursuant to OAR 340-239-0700(3)(f) until either of the following conditions is met:

(i) The calculated methane generation rate is greater than or equal to 664 metric tons (732 tons) per year, or

(ii) The owner or operator submits a Closure Notification pursuant to OAR 340-239-0700(3)(a).

(C) Maintain the cover in any areas of the landfill not exempt per OAR 340-239-0300 so as to minimize landfill gas emissions and visually inspect the landfill surface annually for signs of methane releases including distressed vegetation, cracks or seeps.

(b) If the landfill is closed or inactive, submit to DEQ a Methane Generation Rate Report pursuant to OAR 340-239-0700(3)(f) and all required Closure Notifications pursuant to OAR 340-239-0700(3)(a).

(6) If the methane generation rate reported by the owner or operator according to section (1), (2), (3), or (4) of this rule is greater than or equal to 664 metric tons (732 tons) per year but less than 7,755 metric tons (8,548 tons) per year, then the owner or operator must either:

(a) Comply with the requirements of OAR 340-239-0110 through 340-239-0800. The owner or operator is subject to OAR 340-239-0110 through 340-239-0800 at the time they are required to submit the Methane Generation Rate Report that shows methane generation above 664 metric tons per year; or

(b) Demonstrate that after four consecutive quarterly monitoring periods there is no measured concentration of methane of 200 parts per million by volume (ppmv) or greater using the instantaneous surface monitoring procedures specified in OAR 340-239-0800(3). The owner or operator of the landfill must begin quarterly monitoring within 90 days after the Methane Generation Rate Report is required to be submitted under section (1) or (2) of this rule or OAR 340-239-0100(6) and submit Instantaneous Surface Monitoring Reports according to OAR 340-239-0700(3)(l). Based on the monitoring results, the owner or operator must do one of the following:

(A) Except as provided in OAR 340-239-0600(1)(a), if there is any measured concentration of methane of 200 ppmv or greater, other than non-repeatable, momentary readings, from the surface of an active, inactive, or closed landfill, the landfill owner or operator must comply with OAR 340-239-0110 through OAR 340-239-0800. The owner or operator is subject to OAR 340-239-0110 through OAR 340-239-0800 at the time they are required to submit the Instantaneous Surface Monitoring Report that shows surface emissions of methane above 200 ppmv;

(B) If there is no measured concentration of methane of 200 ppmv or greater from the surface of an active landfill, recalculate the methane generation rate annually using the procedures specified in OAR 340-239-0800(2) and submit a Methane Generation Rate Report annually to DEQ pursuant to OAR 340-239-0700(3)(f), and:

(i) If the landfill is active, the owner or operator must continue quarterly surface emission monitoring using the methods specified in this subsection and prepare and submit an annual Instantaneous Surface Monitoring Report according to OAR 340-239-0700(3)(l); or

(ii) If the landfill is closed, the owner or operator must conduct annual surface emission monitoring using the methods specified in this subsection and prepare and submit an annual Instantaneous Surface Monitoring Report according to OAR 340-239-0700(3)(l).

(C) If there is no measured concentration of methane of 200 ppmv or greater from the surface of a closed or inactive landfill, the requirements of OAR 340-239-0110 through 340-239-0800 no longer apply provided that the owner or operator has completed all of the following:

(i) Satisfied all applicable requirements of OAR 340-239-0400;

(ii) Submitted to DEQ a Waste-in-Place Report, pursuant to section (1), (2), or (3) of this rule; and

(iii) Submitted to DEQ all required Instantaneous Surface Monitoring Reports, pursuant to subsection (5)(b).) of this rule.

(7) If the methane generation rate reported according to section (1), (2), or (3) of this rule is greater than or equal to 7,755 metric tons (8,548 tons) per year, then the owner or operator must comply with the requirements of OAR 340-239-0110 through 340-239-0800.

(8) If owner or operator of a landfill with more than 200,000 tons of waste-in-place adds any liquid other than leachate in a controlled fashion to the waste mass to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic biodegradation of the waste, the owner or operator must install and operate a gas collection and control system that meets the criteria in OAR 340-239-0110 according to the following:

(a) Install the gas collection and control system for the bioreactor before initiating liquids addition. Extend the collection and control system into each new cell or area of the bioreactor prior to initiating liquids addition in that area; and

(b) Begin operating the gas collection and control system within 180 days after initiating liquids addition or within 180 days after achieving a moisture content of 40 percent by weight, whichever is later. Bioreactor moisture content must be calculated in accordance with OAR 340-239-0800(109).

Statutory/Other Authority: ORS 468.020, 468A.025, 468A.040 & 468A.050
Statutes/Other Implemented: ORS 468A.025, 468A.040 & 468A.050

340-239-0105 Title V Operating Permit Requirement
(1) The owner or operator of a municipal solid waste landfill to which this division applies, as provided in 340-239-0010, “Applicability,” and that has a design capacity equal to or greater than 2.5 million megagrams or 2.5 million cubic meters, must obtain an operating permit for the landfill under OAR 340 division 218.

(2) When a municipal solid waste landfill subject to this rule is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under OAR 340 division 218 for the landfill if the landfill is not otherwise subject to the requirements of OAR 340 division 218 and if either of the following conditions are met:

(a) The landfill was never subject to the requirement to install and operate a gas collection and control system under OAR 340-239-0100; or

(b) The landfill meets the conditions for control system removal specified in OAR 340-239-0400(1).

Statutory/Other Authority: ORS 468.020, 468A.025, 468A.040 & 468A.050
Statutes/Other Implemented: ORS 468A.025, 468A.040 & 468A.050

340-239-0110 Gas Collection and Control System Requirements
When required pursuant to OAR 340-239-0100 or 340-239-0400, the owner or operator of a landfill must comply with the gas collection and control system requirements, system operational standards, and well head sampling requirements in this rule.

(1) Design Plan and Installation

(a) If a gas collection and control system which meets the requirements of section (2) of this rule has not been installed, the owner or operator of a landfill must submit a Design Plan to DEQ within one year of becoming subject to this rule. The Design Plan must satisfy the requirements described in subsection (c).

(b) If an owner or operator of a landfill is modifying an existing gas collection and control system to meet the requirements of this division, the owner or operator must submit an amended Design Plan to DEQ that includes any necessary updates or addenda, in accordance with OAR 340-239-0700(3)(j). The amended Design Plan must satisfy the requirements described in subsection (c).

(c) At a minimum, the Design Plan must meet all of the following requirements:

(A) The Design Plan must be prepared and certified by a professional engineer. The following issues must be addressed in the design: Depths of solid waste, solid waste gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, resistance to the solid waste decomposition heat, and ability to isolate individual components or sections for repair or troubleshooting without shutting down entire collection system.

(B) The Design Plan must provide for the control of the collected gas through the use of a gas collection and control system meeting the requirements of OAR 340-239-0110(2) or an alternative method approved pursuant to OAR 340-239-0500.

(C) The Design Plan must demonstrate that the gas collection and control system is designed to handle the maximum expected gas generation flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control system equipment. The maximum expected gas generation flow rate must be calculated using the method in OAR 340-239-0800(5) or an alternative method approved pursuant to OAR 340-239-0500.

(D) The Design Plan must include any proposed alternatives to the requirements, justification for the need for any proposed alternatives, test methods, procedures, compliance measures, monitoring, and recordkeeping or reporting requirements pursuant to OAR 340-239-0500.

(E) The Design Plan must include a description of potential mitigation measures to be used to prevent the release of methane or other pollutants into the atmosphere during the installation or preparation of wells, piping, or other equipment; during repairs or the temporary shutdown of gas collection system components; or, when solid waste is to be excavated and moved.

(F) For active landfills, the Design Plan must identify areas of the landfill that are closed or inactive.

(G) The gas collection and control system must be designed to collect gas at an extraction rate to comply with the surface methane emission limits in OAR 340-239-0200, component leak standard in OAR 340-239-0600(2)(c), and be sufficient to meet all operational and performance standards in this division. The expected gas generation flow rate from the landfill must be calculated pursuant to OAR 340-239-0800(5).

(H) The gas collection and control system must be designed to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions.

(I) Any areas of the landfill that contain only asbestos-containing waste, or nondecomposable solid waste may be excluded from collection provided that the owner or operator submits documentation to DEQ containing the nature of the waste, date of deposition, location and amount of asbestos or non-decomposable solid waste deposited in the area. This documentation may be included as part of the Design Plan.

(J) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices necessary to achieve compliance with section (2) of this rule.

(d) The owner or operator must install and operate a gas collection and control system not later than 30 months after the date that the landfill is required to comply with this rule.

(e) The owner or operator of a controlled landfill must place each well or design component as specified in the approved Design Plan. Following initial construction, the owner or operator of a controlled landfill must install each new component no later than 60 days after the date on which the area controlled by the well is required to be controlled pursuant to this division.

(f) The owner or operator of a landfill subject to this rule must operate, maintain and expand the gas collection system in accordance with the procedures and schedules in the approved Design Plan.

(2) Gas Collection and Control System Operational Standards

(a) The owner or operator of a landfill subject to this rule must satisfy all of the following requirements when operating a gas collection and control system:

(A) Route all collected gas to a gas control device or devices, and operate the gas collection and control system continuously except as provided in sections (4) and (5) of this rule.

(B) Operate the gas collection and control system to comply with paragraph (1)(a)(G) of this rule.

(C) Design and operate the gas collection system to draw all the gas toward the gas control device or devices.

(D) Design and operate the gas collection system to minimize off-site and on-site migration of subsurface gas in compliance with OAR chapter 340, divisions 093, 094, and 095.

(E) In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within one hour of the collection or control system not operating.

(F) Efforts to repair the collection or control system must be initiated and completed in a manner such that downtime is kept to a minimum, and the collection and control system must be returned to operation.

(G) Landfills with a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m3) must install all passive collection systems with liners on the bottom and all sides in all areas in which gas is to be collected. The liners must be installed as required under 40 C.F.R. § 258.40.

(H) Any area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than one percent (1%) of the total amount of methane emissions from the landfill. The amount, location, and age of the material must be documented and provided to DEQ. If data on actual amounts and age is not available, the landfill owner or operator must estimate based on known information and provide all documentation used to make the estimates. A separate methane emissions estimate must be made for each section proposed for exclusion, and the sum of all such sections must be compared to the methane emissions estimate for the entire landfill, and all calculations, data and documentation used to perform the calculations must be submitted to DEQ. The methane emissions from each section proposed for exclusion must be computed using the methods provided in OAR 340-239-0800(5).

(I) The landfill gas extraction components must be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: Convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system must extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors must be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations must be situated with regard to the need to prevent excessive air infiltration.

(J) Vertical wells must be placed so as not to endanger underlying liners and must address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors must be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel

backfill. Collection devices must be designed so as not to allow indirect short circuiting of air into the cover, into the solid waste, into the collection system, or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

(K) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly must include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices must be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

(L) Landfill gas must be conveyed to a control system in compliance with section (2) of this rule through the collection header pipe(s). The gas mover equipment must be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:

(i) For existing collection systems, the flow data must be used to project the maximum flow rate. If no flow data exists, the procedures in subparagraph (2)(a)(L)(ii) of this rule must be used; or

(ii) For new collection systems, the maximum flow rate must be determined in accordance with OAR 340-239-0800(5).

(b) Requirements for Enclosed Flares. A landfill owner or operator subject to this rule who operates an enclosed flare must route the collected gas to an enclosed flare that meets all of the following requirements:

(A) Achieves a methane destruction efficiency of at least 99 percent by weight.

(B) Is equipped with automatic dampers, an automatic shutdown device, a flame arrester, and continuous recording temperature sensors.

(C) During restart or startup there must be a sufficient flow of propane, commercial natural gas, or other approved fuel source, to the pilot light to prevent unburned collected methane from being emitted to the atmosphere.

(D) The gas control device must be operated within the parameter ranges established in the landfill’s Air Contaminant Discharge Permit or Oregon Title V Operating Permit.

(c) Requirements for open flares: A landfill owner or operator subject to this rule who operates an open flare must route the collected gas to an open flare that meets the requirements of 40 C.F.R. § 60.18. The owner or operator of an open flare must comply with all of the following requirements:

(A) Install, calibrate, maintain, and operate the following equipment according to the manufacturer's specifications:

(i) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame; and

(ii) A device that records flow to the flare and bypass of the flare (if applicable). The owner or operator must:

(I) Install, calibrate, and maintain a gas flow rate measuring device that records the flow to the control device at least every 15 minutes; and

(II) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism must be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(B) An open flare installed and operating prior to August 1, 2021, may operate until January 1, 2024, but is thereafter prohibited except as provided in paragraph (2)(c)(C) of this rule.

(C) Operation of an open flare on or after January 1, 2024, is only allowed with DEQ's written approval, which DEQ will determine based on whether the owner or operator demonstrates to the satisfaction of DEQ that one of the following conditions apply:

(i) The methane generation rate is less than 664 metric tons per year pursuant to OAR 340-239-800(2) and is insufficient to support the continuous operation of an enclosed flare or other gas control device;

(ii) The owner or operator is seeking to temporarily operate an open flare during the repair or maintenance of the gas control system, or while awaiting the installation of an enclosed flare, or to address offsite gas migration issues. An owner seeking to temporarily operate an open flare under this subparagraph must submit a written request to DEQ pursuant to OAR 340-239-0500;

(iii) The owner or operator has landfill gas emissions that are unable to be controlled using enclosed flare gas control devices in the gas control system. These emissions being controlled using an open flare may not exceed 664 metric tons (732 tons) per year of methane. An owner or operator seeking to operate an open flare under this subparagraph must submit a written request to DEQ pursuant to OAR 340-239-0500. The request must include an analysis verifying that there is no feasible alternative control device configuration that would use the landfill gas emissions without use of an open flare; or

(iv) The owner or operator otherwise has received written approval from DEQ to operate an open flare pursuant to OAR 340-239-0500.

(d) Requirements for Gas Control Devices other than Flares. A landfill owner or operator subject to this rule may operate a gas control device other than a flare only if the owner or operator complies with one of the following requirements:

(A) The device is a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts per hour (150 million British thermal units per hour), provided that the landfill gas stream is introduced into the flame zone. The performance test is not required for boilers and process heaters with design heat input capacities equal to or greater than 44 megawatts per hour (150 million British thermal units per hour) that burn landfill gas for compliance with this division;

(B) Route the collected gas to an energy recovery device, or series of devices that meets all of the following requirements:

(i) Achieves a methane destruction efficiency of at least 99 percent by weight pursuant to OAR 340-239-0800(6). Lean burn internal combustion engines must reduce the outlet methane concentration to less than 3,000 ppmv, dry basis, corrected to 15 percent oxygen.

(ii) For new gas control devices, the destruction efficiency or parts per million by volume required according to OAR 340-239-0110(2)(d)(A)(i) must be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in OAR 340-239-0800(6) and the DEQ Source Test Manual.

(iii) Existing gas control devices must demonstrate compliance with this rule not later than 180 days from the effective date of this rule using the performance test methods specified in OAR 340-239-0800(6) and the DEQ Source Test Manual.

(iv) Operate the gas control device within the parameter ranges established during the initial or most recent performance test that demonstrates compliance with the standard in OAR 340-239-0110(2)(d)(A)(i). Until a performance test is performed, operate the gas control device within engineering or manufacturer’s established parameter ranges.

(C) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. Venting of treated landfill gas to the ambient air is not allowed. If the treated landfill gas cannot be routed for subsequent sale or beneficial use, then the treated landfill gas must be controlled according to either subsection (2)(b), (2)(c) or (2)(d) of this rule. All emissions vented to the atmosphere from the gas treatment system are subject to the requirements of subsection (2)(b) or (2)(c) of this rule. The owner or operator must prepare a site-specific treatment monitoring plan to include all of the following:

(i) Monitoring records of parameters that are identified in the treatment system monitoring plan and that ensure the treatment system is operating properly for each intended end use of the treated landfill gas. At a minimum, records must include records of filtration, de-watering, and compression parameters.

(ii) Monitoring methods, frequencies, and operating ranges for each monitored operating parameter based on manufacturer's recommendations or engineering analysis for each intended end use of the treated landfill gas.

(iii) Documentation of the monitoring methods and ranges, along with justification for their use.

(iv) List of responsible staff (by name and job title) for data collection.

(v) Processes and methods used to collect the necessary data.

(vi) Description of the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems (CMS).

(e) An owner or operator complying with section (2)(d) of this rule by using a landfill gas treatment system must calibrate, maintain, and operate according to the manufacturer's specifications a device that records flow to the treatment system and bypass of the treatment system (if applicable). The owner or operator must maintain and operate all monitoring systems associated with the treatment system in accordance with the site-specific treatment system monitoring plan required by paragraph (2)(d)(C) of this rule. The owner or operator must:

(A) Install, calibrate, and maintain a gas flow rate measuring device that records the flow to the treatment system at least every 15 minutes;

(B) Install liners or equivalent non-permeable materials on the bottom and all sides in all areas in which gas is to be collected. The liners must be installed as required under 40 C.F.R. 258.40; and

(C) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism must be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(f) Performance Test Requirements. The owner or operator must conduct annual performance tests for any gas control device(s) subject to the requirements of section (2) of this rule using the test methods identified in OAR 340-239-0800(6). Following an initial performance test, the owner or operator must conduct a complete annual performance test each calendar year, no later than 45 days after the anniversary date of the initial performance test. Performance tests must be conducted in compliance with all of the following requirements:

(A) An initial performance test must be conducted within 180 days of start up of the gas collection and control system.

(B) Existing gas control devices must demonstrate compliance with this rule not later than 180 days from the effective date of this rule using the test methods specified in OAR 340-239-0800(6) and the DEQ Source Test Manual.

(C) If a gas control device remains in compliance with standards in section (2) of this rule after three consecutive performance tests, the owner or operator may conduct performance tests once every three years, but no later than 45 days after each third anniversary date of the initial performance test. If a subsequent performance test shows the gas collection and control system

does not demonstrate compliance with the standard(s) in section (2) of this rule, the performance testing frequency must return to annual.

(D) The performance tests must be conducted under such conditions as DEQ specifies to the owner or operator based on representative performance of the affected source for the period being tested. Representative conditions exclude periods of startup and shutdown unless specified by DEQ. The owner or operator may not conduct performance tests during periods of malfunction. The owner or operator must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. Upon request, the owner or operator shall make available to DEQ such records as may be necessary to determine the conditions of performance tests.

(3) Wellhead sampling. A landfill owner or operator required to comply with section (2) of this rule for an active gas collection system must install a sampling port and measuring devices, or an access port for measuring devices, at each wellhead and comply with the following, using measuring devices that meet the requirements of OAR 340-239-0800(7):

(a) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in OAR 340-239-0600(3);

(b) Monitor temperature of the landfill gas on a monthly basis as provided in OAR 340-239-0600(3); and

(c) Measure the gauge pressure in the gas collection header on a monthly basis as provided in OAR 340-239-0600(2)(d).

(4) Well Raising. The requirements of paragraph (2)(a)(A), paragraph (2)(a)(B), and section (3) of this rule do not apply to individual wells involved in well raising provided the following conditions are met:

(a) New fill is being added or compacted in the immediate vicinity around the well; and

(b) Once installed, a gas collection well extension is sealed or capped until the raised well is reconnected to a vacuum source.

(5) Repairs and Temporary Shutdown of Gas Collection System Components: The requirements of paragraphs (2)(a)(A) and (2)(a)(B) do not apply to individual landfill gas collection system components that must be temporarily shut down in order to repair the components due to emergencies, catastrophic events such as earthquakes, to extinguish landfill fires, to prevent landfill fires, to connect new landfill gas collection system components to the existing system, to perform construction activities pursuant to OAR 340-239-0300, or to conduct performance testing, provided the following requirements are met:

(a) Any new gas collection system components required to maintain compliance with this division must be included in the most recent Design Plan pursuant to section (1) of this rule. The

owner or operator must comply with applicable provisions of the Notice of Construction requirements in OAR chapter 340, division 210 and permit modification requirements of OAR chapter 340, division 216 or 218 prior to the construction, installation and operation of new landfill gas collection system components;

(b) Methane emissions are minimized during shutdown pursuant to paragraph (1)(a)(E) of this rule; and

(c) The owner or operator must submit a notification to DEQ after any temporary shutdown due to an emergency, catastrophic event or landfill fires in accordance with OAR 340-239-0700(3)(n).

Statutory/Other Authority: ORS 468.020, 468A.025, 468A.040 & 468A.050
Statutes/Other Implemented: ORS 468A.025, 468A.040 & 468A.050

340-239-0200 Compliance Standards
When required as provided in OAR 340-239-0100 through 340-239-0800, the owner or operator of a landfill must comply with this rule.

(1) Surface Emission Methane Concentration Limits. Except as provided in OAR 340-239-0110(4), 340-239-0110(5), 340-239-0300, and 340-239-0600(1), beginning August 1, 2022, or upon commencing operation of a newly installed gas collection and control system or modification of an existing gas collection and control system pursuant to OAR 340-239-0110(1), whichever is later, no location on the landfill surface may exceed either of the following methane concentration limits:

(a) 500 ppmv, other than nonrepeatable, momentary readings, as determined by instantaneous surface emissions monitoring conducted in accordance with OAR 340-239-0800(3)(b);

(b) An average methane concentration limit of 25 ppmv as determined by integrated surface emissions monitoring conducted in accordance with OAR 340-239-800(3)(c).

(2) Wellhead Gauge Pressure Requirement: Each landfill gas collection and control system wellhead must be operated under a negative pressure without causing air infiltration, except as provided in OAR 340-239-0110(4) and 340-239-110(5), or under any of the following conditions:

(a) Use of a geomembrane or synthetic cover. The owner or operator must develop acceptable pressure limits for the wellheads and include them in the Design Plan;

(b) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows; or

(c) A fire or increased well temperature. The owner or operator must record instances when positive pressure occurs in efforts to avoid a fire. These records must be submitted with the semi-annual reports as provided in OAR 340-239-700(3)(c).

(3) Wellhead Temperature Requirement:

(a) Each landfill gas collection and control system interior wellhead in the collection system must be operated with a landfill gas temperature less than 62.8 degrees Celsius (145 degrees Fahrenheit).

(b) The landfill owner or operator may request a higher operating temperature value at a particular well. A higher operating value demonstration must be submitted to DEQ for approval and must include supporting data demonstrating that the elevated parameter neither causes fires nor significantly inhibits anaerobic decomposition by killing methanogens. The demonstration must satisfy both criteria in order to be approved (i.e., it is only acceptable if it neither causes fires nor kills methanogens).

Statutory/Other Authority: ORS 468.020, 468A.025, 468A.040 & 468A.050
Statutes/Other Implemented: ORS 468A.025, 468A.040 & 468A.050

340-239-0300 Construction Activities
The requirements of OAR 340-239-0200 do not apply to the working face of the landfill or to areas of the landfill surface where the landfill cover material has been removed and solid waste has been exposed for the purpose of installing, expanding, replacing, or repairing components of the landfill gas, leachate, or gas condensate collection and removal system, for conducting a remedial action, or for law enforcement activities requiring excavation; as long as these areas are kept to the minimum size and time duration as possible.

Statutory/Other Authority: ORS 468.020, 468A.025, 468A.040 & 468A.050
Statutes/Other Implemented: ORS 468A.025, 468A.040 & 468A.050

340-239-0400 Permanent Shutdown and Removal of the Gas Collection and Control System
When a landfill owner or operator has installed a gas collection and control system pursuant to OAR 340-239-0110, the owner or operator may permanently shutdown and remove the system only as provided in this rule.

(1) The gas collection and control system at a closed landfill, or at a closed area of a landfill, may be capped or removed provided all of the following requirements are met:

(a) The gas collection and control system was in operation for at least 15-years, unless the owner or operator can demonstrate to the satisfaction of DEQ that due to declining methane rates the

owner or operator of the landfill will be unable to operate the gas collection and control system for a 15-year period.

(b) The calculated or measured methane generation rate at the landfill is less than 664 metric tons (732 tons) per year on three successive test dates. For measured methane generation rates, the test dates must be no less than 90 days apart and no more than 180 days apart. The calculated methane generation rate must be calculated pursuant to OAR 340-239-0800(2).

(c) Surface methane concentration measurements of methane do not exceed 200 ppmv.

(d) The owner or operator submits an Equipment Removal Report to DEQ pursuant to OAR 340-239-0700(3)(b).

(e) The concentration of methane gas at the landfill does not exceed 25 percent of the lower explosive limit for methane concentration in facility structures (excluding gas collection and control system components) or the lower explosive limit for methane concentration at the property boundary.

(2) The owner or operator of the landfill that has capped or removed a gas collection and control system under section (1) of this rule must conduct surface methane concentration measurements over the portion of the landfill with the capped or removed gas collection and control system pursuant to OAR 340-239-0800(3) for at least eight consecutive calendar quarters after the gas collection and control system is capped or removed. The measurements must comply with the following requirements:

(a) The walking grid in OAR 340-239-0800(3)(a)(B) may be reduced to 100-foot spacing so long as the walking grid is offset by 25-feet each quarter so that by the end of one year of monitoring, the entire surface area has been monitored every 25 feet;

(b) If there is no measured concentration of methane of 200 ppmv or greater from the surface of the closed landfill in any of these measurement events, the owner or operator must submit a final gas collection and control system Closure Notification to DEQ pursuant to OAR 340-239-0700(3)(a); and

(c) If there is any measured concentration of methane of 200 ppmv or greater in any of these measurement events, other than nonrepeatable, momentary readings, as determined by instantaneous surface emissions monitoring, from the surface of the closed landfill, the owner or operator must comply with OAR 340-239-0110 through 340-239-0800.

Statutory/Other Authority: ORS 468.020, 468A.025, 468A.040 & 468A.050
Statutes/Other Implemented: ORS 468A.025, 468A.040 & 468A.050

340-239-0500 Alternative Compliance Options

(1) The owner or operator of a landfill may request alternatives to the compliance measures, monitoring requirements, test methods and procedures of OAR 340-239-0110, 340-239-0600, and 340-239-0800. Any alternatives requested by the owner or operator of a landfill must be submitted in writing to DEQ and receive written approval from DEQ before they may be implemented. Alternative compliance option requests may include, but are not limited to, the following:

(a) Semi-continuous (batch) operation of the gas collection and control system due to insufficient landfill gas flow rates;

(b) Alternative wind speed requirements for landfills consistently having winds in excess of the limits specified in this division;

(c) Alternative walking patterns to address potential safety and other issues, such as: steep or slippery slopes, monitoring instrument obstructions, and physical obstructions;

(d) Exclusion of construction areas and other dangerous areas from landfill surface inspection; and

(e) Exclusion of paved roads that do not have any cracks, pot holes, or other penetrations from landfill surface inspection.

(2) The owner or operator of a landfill seeking to use an alternative compliance option pursuant to this rule must provide information satisfactory to DEQ demonstrating that:

(a) Off-site migration of landfill gas is being, and will be, effectively controlled; and

(b) The proposed alternatives provide an equivalent level of methane emission control, as compared with the methane controls that would have been required of the owner or operator of the landfill under OAR 340-239-0110, 340-239-0600 and 340-239-0800, as applicable. DEQ may not approve use of an alternative compliance option unless it determines the proposed alternative will provide an equivalent level of methane emission control and effectively control off-site migration of landfill gas.

Statutory/Other Authority: ORS 468.020, 468A.025, 468A.040 & 468A.050
Statutes/Other Implemented: ORS 468A.025, 468A.040 & 468A.050

340-239-0600 Monitoring Requirements

When required as provided in OAR 340-239-0100 through 340-239-0800, the owner or operator of a landfill must comply with the monitoring requirements in this rule.

(1) Surface Emissions Monitoring Requirements. The owner or operator of a landfill with a gas collection and control system must conduct quarterly instantaneous and integrated surface

monitoring of the landfill surface using the procedures specified in OAR 340-239-0800(3). All of the following requirements apply to such monitoring:

(a) Instantaneous Surface Monitoring. Any reading exceeding a limit specified in OAR 340-239-0100(6)(b), 340-239-0200(1)(a), or 340-239-0400(2)(c) must be recorded as an exceedance and all of the following actions must be taken:

(A) The owner or operator must record the name of the individual that conducted SEM, date, location, and value of each exceedance, along with retest dates and results. The location of each exceedance must be clearly marked and identified on a topographic map of the landfill, drawn to scale with the location of both the grids and the gas collection system clearly identified. The documentation required under this subsection must be retained in the landfill's files and reported to DEQ as provided in OAR 340-239-0700.

(B) The owner or operator must take corrective action such as, but not limited to, cover maintenance or repair, or well vacuum adjustments.

(C) The owner or operator must remonitor the location of the exceedance, and the location must be remonitored within ten days of a measured exceedance. The owner or operator must comply with all of the following requirements:

(i) If the remonitoring of the location shows a second exceedance, the owner or operator must take additional corrective action and the location must be re-monitored again no later than 10 days after the second exceedance.

(ii) If the remonitoring shows a third exceedance, the owner or owner or operator must install a new or replacement collection device and must demonstrate compliance no later than 120 days after detecting the third exceedance.

(iii) Any location that initially showed an exceedance but has a methane concentration at the 10-day remonitoring of less than 500 ppmv methane, or 200 ppmv methane if this is to determine compliance with OAR 340-239-0100(6)(b), must be re-monitored one month from the initial exceedance. If the one-month re-monitoring shows a concentration less than 500 ppmv methane, or 200 ppmv methane if this is to determine compliance with OAR 340-239-0100(6)(b), no further monitoring of that location is required until the next quarterly monitoring period. If the one-month re-monitoring shows an exceedance, the owner or operator must install a new or replacement well to achieve compliance no later than 120 days after detecting the third exceedance.

(iv) For any location where monitored methane concentration equals or exceeds 500 ppmv, or 200 ppmv methane if this is to determine compliance with OAR 340-239-0100(6)(b), three times within a quarterly period, a new well or other collection device must be installed within 120 days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to DEQ for approval pursuant to OAR 340-239-0500.

(D) The owner or operator of a closed or inactive landfill, or of any closed or inactive areas on an active landfill that has no monitored exceedances of the limits specified in OAR 340-239-0200(1)(a) after four consecutive quarterly instantaneous surface monitoring periods, may shift to annual instantaneous surface monitoring.

(E) An owner or operator that has shifted to annual instantaneous surface monitoring under paragraph (1)(a)(C) of this rule must return to quarterly instantaneous surface monitoring upon any exceedances of the limits specified in OAR 340-239-0200(1)(a) that cannot be remediated within 10 days or upon any exceedances detected during a DEQ inspection.

(b) Integrated Surface Monitoring. Any reading exceeding the limit specified in OAR 340-239-0200(1)(b) must be recorded as an exceedance and all of the following actions must be taken:

(A) The owner or operator must record the average surface concentration measured as methane for each grid along with retest dates and results. The location of the grids and the gas collection system must be clearly marked and identified on a topographic map of the landfill drawn to scale. The documentation required under this subsection must be retained in the landfill's files and reported to DEQ as provided in OAR 340-239-0700.

(B) Within 10 days of a measured exceedance, corrective action must be taken by the owner or operator such as, but not limited to; cover maintenance or repair, or well vacuum adjustments and the grid must be remonitored. The owner or operator must comply with all of the following requirements:

(i) If the remonitoring of the grid shows a second exceedance, additional corrective action must be taken and the location must be re-monitored again no later than 10 days after the second exceedance.

(ii) If the remonitoring in subparagraph (1)(b)(B)(i) of this rule shows a third exceedance, the owner or operator must install a new or replacement well to achieve compliance no later than 120 days after detecting the third exceedance.

(C) The owner or operator of a closed or inactive landfill, or of any closed or inactive areas on an active landfill that has no monitored exceedances of the limits specified in OAR 340-239-0200(1)(b) after four consecutive quarterly integrated surface monitoring periods, may shift to annual integrated surface monitoring.

(D) An owner or operator that has shifted to annual integrated surface monitoring under paragraph (1)(b)(C) of this rule must return to quarterly integrated surface monitoring upon the occurrence of any exceedances of the limits specified in OAR 340-239-0200(1)(b) during annual monitoring or detected during any DEQ inspection.

(2) Gas Control System Equipment Monitoring. The landfill owner or operator must monitor the gas control system using the following procedures:

(a) For enclosed flares all of the following equipment must be installed, calibrated, maintained, and operated according to the manufacturer's specifications:

(A) A temperature monitoring device equipped with a continuous recorder that has an accuracy of plus or minus (±) one percent of the temperature being measured expressed in degrees Celsius or Fahrenheit. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts per hour (150 million British thermal units per hour).

(B) A device that records gas flow to the control device and bypass of the control device (if applicable). The owner or operator must:

(i) Install, calibrate, and maintain a gas flow rate measuring device that records the flow to the control device at least every 15 minutes; and

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism must be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(b) For a gas control device other than an enclosed flare, the owner or operator must provide information describing the operation of the gas control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The owner or operator must maintain, operate, and monitor the device according to the written manufacturer instructions and specifications. Alternative compliance requests must be submitted to DEQ as specified in OAR 340-239-0500. DEQ may specify additional monitoring procedures.

(c) Components containing landfill gas and under positive pressure must be monitored quarterly for leaks. Any component leak over 500 ppmv methane must be tagged and repaired within 10 days. Any component leak over 250 ppmv must be recorded pursuant to OAR 340-239-0700(2)(a)(S). Quarterly component leak testing at landfills having landfill gas-to-energy facilities may be conducted prior to scheduled maintenance or planned outage periods.

(d) The owner or operator must measure gauge pressure in the gas collection header applied to each individual well on a monthly basis. If a positive pressure exists, other than as provided in OAR 340-239-0200(2), action must be initiated to correct the exceedance within 5 days. Any attempted corrective measure must not cause exceedances of other operational or performance standards.

(3) Wellhead Monitoring. On a monthly basis for each individual wellhead, the landfill owner or operator must determine and record gauge pressure, temperature, and nitrogen or oxygen content of gas emissions. Such monitoring must comply with all of the following requirements:

(a) If there is any positive pressure reading other than as provided in OAR 340-239-0110(4) or (5), the owner or operator must take the following actions. Any attempted corrective measure must not cause exceedances of other operational or performance standards:

(A) Initiate corrective action within five days of the positive pressure measurement;

(B) If negative pressure cannot be achieved without excess air infiltration within 15 days of the date the positive pressure was first measured, the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after positive pressure was first measured. The owner or operator must submit a Corrective Action Report to DEQ pursuant to OAR 340-239-0700(3)(k);

(C) If corrective actions cannot be fully implemented within 60 days following the positive pressure measurement for which the root cause analysis was required, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the positive pressure measurement; and

(D) If corrective action is expected to take longer than 120 days to complete after the initial exceedance, the owner or operator must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to DEQ.

(b) If a well exceeds the operating parameter for temperature, action must be initiated to correct the exceedance within five days. Any attempted corrective measure must not cause exceedances of other operational or performance standards, and the owner or operator must comply with all of the following requirements:

(A) If a landfill gas temperature less than 62.8 degrees Celsius (145 degrees Fahrenheit), or as established in OAR 340-239-200(3), cannot be achieved within 15 days of the first measurement of landfill gas temperature greater than 62.8 degrees Celsius (145 degrees Fahrenheit), the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after a landfill gas temperature greater than 62.8 degrees Celsius (145 degrees Fahrenheit) was first measured. The owner or operator must keep records according to OAR 340-239-0700(2).

(B) If corrective actions cannot be fully implemented within 60 days following the temperature measurement for which the root cause analysis was required, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the measurement of landfill gas temperature greater than 62.8 degrees Celsius (145 degrees Fahrenheit). The owner or operator must submit the items listed in OAR 340-239-0700(3)(c)(A) as part of the next semi-annual report. The owner or operator must keep records according to OAR 340-239-0700(2).

(C) If corrective action is expected to take longer than 120 days to complete after the initial exceedance, the owner or operator must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to DEQ, according to OAR 340-239-0700(3)(c)(A) and OAR 340-239-600(3)(a)(C). The owner or operator must keep records according to OAR 340-239-0700(2).

(D) If a landfill gas temperature measured at either the wellhead or at any point in the well is greater than or equal to 76.7 degrees Celsius (170 degrees Fahrenheit) and the carbon monoxide concentration measured, according to the procedures in OAR 340-239-0800(7), is greater than or equal to 1,000 ppmv the corrective action(s) for the wellhead temperature standard (62.8 degrees Celsius or 145 degrees Fahrenheit) must be completed within 15 days.

(E) If a higher operating temperature has not been approved by DEQ, the enhanced monitoring specified in OAR 340-239-0800(8) is required at each well with a measurement of landfill gas temperature greater than 62.8 degrees Celsius (145 degrees Fahrenheit).

(4) Cover integrity. The landfill owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis. The cover must conform with requirements in OAR chapter 340, divisions 094 and 095.

(5) The monitoring requirements of this division apply at all times, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. Monitoring system repairs completed in response to monitoring system malfunctions to return the monitoring system to operation must be completed as expeditiously as practicable.

Statutory/Other Authority: ORS 468.020, 468A.025, 468A.040 & 468A.050
Statutes/Other Implemented: ORS 468A.025, 468A.040 & 468A.050

340-239-0700 Recordkeeping and Reporting Requirements.
When required as provided in OAR 340-239-0100 through 340-239-0800, the owner or operator of a landfill must comply with the recordkeeping and reporting requirements in this rule.

(1) The electronic reporting requirements of 40 C.F.R. §§ 60.38f(j), 60.767(i), and 63.1981(i) are incorporated by reference herein. Owners or operators of landfills that meet the applicability or designated facility requirements in 40 C.F.R. §§ 60.31f, 60.760, or 63.1935 must comply with the electronic reporting requirements of 40 C.F.R. §§ 60.38f(j), 60.767(i), or 63.1981(i), respectively and as applicable.

(2) Recordkeeping Requirements.

(a) A landfill owner or operator subject to this division must maintain the following records for at least five years:

(A) All gas collection system downtime exceeding five days, including dates of the downtime, individual well shutdown and disconnection times, the reason for the downtime, and any corrective actions conducted in response to the downtime;

(B) All gas control system downtime in excess of one consecutive hour, the reason for the downtime, the length of time the gas control system was shutdown, and any corrective actions conducted in response to the downtime;

(C) All instantaneous surface readings of 100 ppmv methane or greater. All exceedances of the limits in OAR 340-239-0100(6)(b) and 340-239-0200, including the location of the leak (or affected grid), leak concentration in ppmv methane, date and time of measurement, the action taken to repair the leak, date of repair, any required remonitoring and the remonitored concentration in ppmv methane, wind speed during surface sampling, and the installation date and location of each well installed as part of a gas collection system expansion;

(D) Any positive wellhead gauge pressure measurements, the name of the individual that conducted the actions, the date and time of the measurements, the well identification number, and the corrective action taken;

(E) Each wellhead temperature monitoring value of 62.8 degrees Celsius (145 degrees Fahrenheit) or above, each wellhead nitrogen level at or above 20 percent, and each wellhead oxygen level at or above 5 percent;

(F) Monthly solid waste acceptance rate, for active landfills or landfills that have accepted waste within the last five years;

(G) The current amount of waste-in-place including waste composition;

(H) The nature, location, amount, and date of deposition of nondecomposable waste for any landfill areas excluded from the collection system;

(I) Results of any performance tests conducted pursuant to OAR 340-239-0110(2)(f);

(J) Descriptions of mitigation measures taken to prevent the release of methane or other emissions into the atmosphere:

(i) When solid waste was brought to the surface during the installation or preparation of wells, piping, or other equipment;

(ii) During repairs or the temporary shutdown of gas collection system components; and

(iii) When solid waste was excavated and moved;

(K) Any construction activities pursuant to OAR 340-239-0300. Records must contain the following information:

(i) A description of the actions being taken, the areas of the landfill that will be affected by these actions, the reason the actions are required, and any landfill gas collection system components that will be affected by these actions;

(ii) Construction start and finish dates, projected equipment installation dates, and projected shut down times for individual gas collection system components; and

(iii) A description of the mitigation measures taken to minimize methane emissions and other potential air quality impacts;

(L) For any root cause analysis for which corrective actions are required, records of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature reading, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates, and a copy of any comments or final approval on the corrective action analysis or schedule from DEQ;

(M) The equipment operating parameters specified to be monitored under OAR 340-239-0600(2) as well as records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The records must include the following information:

(i) For enclosed flares, all 3-hour periods of operation during which the average temperature difference was more than 28 degrees Celsius (or 50 degrees Fahrenheit) below the average combustion temperature during the most recent performance test at which compliance with OAR 340-239-0110(2)(b) and OAR 340-239-0110(2)(c) was determined;

(ii) For any owner or operator who uses a boiler or process heater with a design heat input capacity of 44 megawatts per hour (150 million British thermal units per hour) or greater to comply with OAR 340-239-0110(2)(c), all periods of operation of the boiler or process heater (e.g., steam use, fuel use, or monitoring data collected pursuant to other federal, State, local, or tribal regulatory requirements), readily accessible continuous records of the equipment operating parameters specified to be monitored in OAR 340-239-0600(2) and up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded;

(iii) For open flares, continuous records of the flame or flare pilot flame monitoring, and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent; and

(iv) The indication of flow to the control system and the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines;

(N) All collection and control system exceedances of the operational standards; the reading in the subsequent month, whether or not the second reading is an exceedance; and the location of each exceedance;

(O) Landfill owners or operators who convert waste-in-place from volume to mass, must keep readily accessible, records of the annual recalculation of site-specific density, design capacity, and the supporting documentation;

(P) Landfill owners or operators demonstrating that site-specific surface methane emissions are below 200 ppmv by conducting surface emission monitoring under OAR 340-239-0100(6)(b) must keep for at least five years up-to-date, readily accessible records of all surface emissions monitoring and information related to monitoring instrument calibrations conducted according to sections 8 and 10 of Method 21 of appendix A of 40 C.F.R. Part 60, including all of the following items:

(i) Calibration records, including:

(I) Date of calibration and initials of operator performing the calibration;

(II) Calibration gas cylinder identification, certification date, and certified concentration;

(III) Instrument scale(s) used;

(IV) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value; and

(V) If an owner or operator makes their own calibration gas, a description of the procedure(s) used;

(ii) Digital photographs of the instrument setup, including the wind barrier. The photographs must be accurately time and date-stamped and taken at the first sampling location prior to sampling and at the last sampling location after sampling at the end of each sampling day;

(iii) Timestamp of each surface scan reading which must be detailed to the nearest second, based on when the sample collection begins and log for the length of time each sample was taken using a stopwatch (*e.g.,* the time the probe was held over the area);

(iv) Location of each surface scan reading. The owner or operator must determine the coordinates using an instrument with an accuracy of at least four meters. Coordinates must be in decimal degrees with at least five decimal places;

(v) Monitored methane concentration (ppmv) of each reading;

(vi) Background methane concentration (ppmv) after each instrument calibration test;

(vii) For readings taken at each surface penetration, the unique identification location label matching the label specified in subparagraph OAR 340-239-0700(2)(a)(P) (iv); and

(viii) Records of the operating hours of the gas collection system for each destruction device;

(Q) For each owner or operator reporting leachate or other liquids addition under OAR 340-239-0700(3)(g), keep records of any engineering calculations or company records used to estimate the quantities of leachate or liquids added, the surface areas for which the leachate or liquids were applied, and the estimates of annual waste acceptance or total waste in place in the areas where leachate or liquids were applied;

(R) The date of initial placement of waste in newly constructed landfill cells; and

(S) Documentation of any component leaks above 250 ppmv methane detected pursuant to OAR 340-239-0600(2)(c) and all repairs performed in response to any component leaks above 500 ppmv.

(T) The maximum design capacity of the landfill.

(b) The landfill owner or operator must maintain the following records for the life of the control system equipment, as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring must be maintained for a minimum of five years. Records of the control device vendor specifications must be maintained until removal:

(A) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in OAR 340-239-0110(1)(a);

(B) The expected gas generation flow rate as calculated pursuant to OAR 340-239-0800(5);

(C) The percent reduction of methane achieved by the control device determined pursuant to OAR 340-239-0800(6);

(D) For a boiler or process heater, the description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance test;

(E) When an owner or operator subject to the provisions of this division is demonstrating compliance with OAR 340-239-0110(2) through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts per hour (150 million British thermal units per hour):

(i) The average temperature measured at least every 15 minutes and averaged over the same time period of the performance test; and

(ii) The percent reduction of methane determined as specified in OAR 340-239-0800(6) achieved by the control device;

(F) For an open flare, the flare type (i.e., steam-assisted, air-assisted, or non-assisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in 40 C.F.R. § 60.18, which is incorporated by reference herein; and records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame or the flare flame is absent;

(G) An up to date map showing each existing and planned gas collector in the system;

(H) Where an owner or operator subject to the provisions of this division is demonstrating compliance with OAR 340-239-0110(2) through use of a landfill gas treatment system:

(i) Bypass records. Records of the flow of landfill gas to, and bypass of, the treatment system; and

(ii) Site-specific treatment monitoring plan meeting the requirements of OAR 340-239-0110(2)(d)(C).

(I) An up-to-date, readily accessible plot map showing each existing and planned collectors in the system and providing a unique identification location label for each collector.

(c) Bioreactor moisture content calculations: Any landfill owner or operator conducting calculations to determine the moisture content of a bioreactor must document the calculations and the basis of any assumptions. made to make such calculations. The records of the calculations must be kept for at least five years and until liquids addition ceases.

(d) Record Retention: The landfill owner or operator must maintain copies of the records and reports required by this division and provide them to DEQ within five business days upon request.

(3) Reporting Requirements.

(a) Closure Notification. Any owner or operator of a landfill that has ceased accepting waste must submit a Closure Notification to DEQ within 30 days of waste acceptance cessation, and:

(A) The Closure Notification must include the last day solid waste was accepted, the anticipated closure date of the landfill, and the estimated waste-in-place; and

(B) DEQ may request additional information as necessary to verify that permanent closure has taken place in accordance with the requirements of any applicable regulations, requirements, or ordinances in effect at the time of closure.

(b) Equipment Removal Report. The landfill owner or operator must submit a gas collection and control system Equipment Removal Report to DEQ 30 days prior to well capping, removal or cessation of operation of the gas collection, treatment, or control system equipment. The report must contain the following information:

(A) A copy of the Closure Notification submitted pursuant to OAR 340-239-0700(3)(a);

(B) A copy of the Initial Performance Test Report or other documentation demonstrating that the gas collection and control system has been installed and operated for a minimum of 15 years, unless the owner or operator can demonstrate to the satisfaction of DEQ that due to declining methane rates the landfill is unable to operate the gas collection and control system for a 15-year period; and

(C) Surface emissions monitoring results needed to verify that landfill surface methane concentration measurements do not exceed the limits specified in OAR 340-239-0200.

(c) Semi-Annual Report. A landfill owner or operator subject to this rule, must prepare semi-annual reports for the periods of January 1 through June 30 of each year, unless otherwise approved in writing by DEQ. The Semi-Annual Report will be due on July 30, unless otherwise approved in writing by DEQ. The Semi-Annual Report must contain the following information:

(A) All instantaneous surface readings of 100 ppmv or greater. All exceedances of the limits in OAR 340-239-0100(6)(b), 340-239-0200 and 340-239-0600(2)(c) including the location of the leak (or affected grid), leak concentration in ppmv, date and time of measurement, the action taken to repair the leak, date of repair, any required remonitoring and the remonitored concentration in ppmv, wind speed during surface sampling, the concentration recorded at each location for which an exceedance was recorded in the previous month, and the installation date and location of each well installed as part of a gas collection system expansion;

(B) For any corrective action analysis for which corrective actions are required in OAR 340-239-0600(3)(a) and 340-239-0600(3)(b) and that take more than 60 days to correct the exceedance, the root cause analysis conducted, including a description of the recommended corrective action(s), the date for corrective action(s) already completed following the positive pressure or elevated temperature reading, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates;

(C) All known, prevented, or suspected subsurface landfill fire(s) along with potential causes and any efforts conducted to avoid or put out the fire(s). Any positive pressure readings that may have contributed to the known, prevented, or suspected fire;

(D) The number of times that applicable parameters monitored under OAR 340-239-0110(2) or 340-239-0200, were exceeded and when the gas collection and control system was not operating in compliance with OAR 340-0110(2)(a) including periods of startup, shutdown, and malfunction. For each instance, report the date, time, and duration of each exceedance. Where an owner or operator subject to the requirements of this division is demonstrating compliance with the operational standard for temperature OAR 340-239-0600(3)(b), the owner or operator must provide a statement of the wellhead operational standard for temperature and oxygen the landfill is complying with for the period covered by the report. The report must indicate:

(i) The number of times each of those parameters monitored under OAR 340-239-0600(3)(b), were exceeded. For each instance, report the date, time, and duration of each exceedance; and

(ii) The number of times the parameters for the site-specific treatment system in OAR 340-239-0110(2)(d)(C) were exceeded;

(E) Description and duration of all periods when the gas stream was diverted from the control device or treatment system through a bypass line or the indication of bypass flow as specified OAR 340-239-0110(2)(c);

(F) Description and duration of all periods when the control device or treatment system was not operating and length of time the control device or treatment system was not operating;

(G) All periods when the collection system was not operating;

(H) The date of installation and the location of each well or collection system expansion;

(I) Each owner or operator required to conduct enhanced monitoring in accordance with OAR 340-239-0800(8) for temperatures exceeding 62.8 degrees Celsius (145 degrees Fahrenheit) must include the results of all monitoring activities conducted during the period;

(J) For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts per hour (150 million British thermal units per hour) or greater, all three-hour periods of operation during which the average temperature was more than 28 degrees Celsius (82 degrees Fahrenheit) below the average combustion temperature during the most recent performance test; and

(K) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone.

(d) Annual Report. An owner or operator subject to the requirements of this rule must prepare an Annual Report for the period of January 1 through December 31 of each year. Each Annual Report must be submitted to DEQ by February 15 of the following year, unless otherwise specified by DEQ, but may not be due later than March 15. The Annual Report must consist of the semi-annual and the following annual reporting requirements:

(A) Landfill name, owner and operator, address, and permit number as issued according to division 216 or 218;

(B) Total volume of landfill gas collected (reported in standard cubic feet);

(C) Average composition of the landfill gas collected over the reporting period (reported in percent methane and percent carbon dioxide by volume);

(D) Gas control device type, year of installation, rating, fuel type, and total amount of landfill gas combusted in each control device;

(E) The date that the gas collection and control system was installed and in full operation;

(F) The percent methane destruction efficiency of each gas control device(s);

(G) Type and amount of supplemental fuels burned with the landfill gas in each device, if applicable;

(H) Total volume of landfill gas shipped off-site (MMscf), the composition of the landfill gas collected (reported in percent methane and percent carbon dioxide by volume), and the recipient of the gas;

(I) Most recent topographic map of the site showing the areas with final cover and a geomembrane and the areas with final cover without a geomembrane with corresponding percentages over the landfill surface;

(J) The information required paragraphs (2)(a)(A) through (2)(a)(E), (2)(a)(G), (2)(a)(J) through (2)(a)(L) of this rule;

(K) Instrument specifications for all instruments used for monitoring compliance with this division; and

(e) Waste-in-Place Report. An owner or operator subject to the requirements of OAR 340-239-0100(1), 340-239-0100(2), 340-239-0100(3), or 340-239-0100(4) must prepare an initial Waste-in-Place Report and annual Waste-in-Place reports each following year. The initial Waste-in-Place Report must be submitted by October 1, 2022. Each annual Waste-in-Place Report must be prepared for the period of January 1 through December 31 of each year and be submitted to DEQ by January 31 of the following year. DEQ may extend this deadline through March 1 in the form of a permit condition. The report also must include:

(A) Landfill name, owner and operator, address, and the permit number as issued according to division 216 or 218;

(B) The landfill's status (active, closed, or inactive) and the estimated waste-in-place, as of December 31 of the prior year, in tons;

(C) A description of the known and assumed waste composition in the landfill;

(D) The most recent topographic map of the site showing the areas with final cover and a geomembrane and the areas with final cover without a geomembrane with a calculation of the corresponding percentage geomembrane coverage over the landfill surface.

(f) Methane Generation Rate Report. An owner or operator subject to the requirements of OAR 340-239-0100(1), 340-239-0100(2), 340-239-0100(3), or 340-239-0100(4) must calculate the methane generation rate using the calculation procedures specified in OAR 340-239-0800(2) and report the results, along with a summary of efforts being implemented at the landfill to reduce landfill gas emissions, to DEQ:

(A) By October 1, 2022 for landfills with greater than 200,000 tons waste-in-place;

(B) Within 90 days of reaching 200,000 tons of waste-in-place;

(C) By March 15 of each subsequent year while waste-in-place is greater than 200,000 tons and the methane generation rate is less than 664 metric tons (732 tons) per year. The calculation, along with relevant parameters, must be provided as part of the report; and

(D) The report must include the results of a visual inspection of the landfill cover and any actions done to fix leaks and minimize methane releases.

(g) Liquids Addition Report. An owner or operator subject to OAR 340-239-0110 that has employed leachate recirculation or added liquids based on a Research, Development, and Demonstration permit (issued through Resource Conservation and Recovery Act, subtitle D, part 258) within the last 10 years must submit to DEQ, annually, the following information:

(A) Volume of leachate recirculated (gallons per year) and the reported basis of those estimates (records or engineering estimates);

(B) Total volume of all other liquids added (gallons per year) and the reported basis of those estimates (records or engineering estimates);

(C) Surface area (acres) over which the leachate is recirculated (or otherwise applied);

(D) Surface area (acres) over which any other liquids are applied;

(E) The total waste disposed (megagrams) in the areas with recirculated leachate, added liquids, or both, based on on-site records to the extent data are available, or engineering estimates and the reported basis of those estimates;

(F) The annual waste acceptance rates (megagrams per year) in the areas with recirculated leachate, added liquids, or both, based on on-site records to the extent data are available, or engineering estimates;

(G) The initial report must contain items in OAR 340-239-0700(2)(g)(A) through 340-239-0700(2)(g)(F) per year for the initial annual reporting period as well as for each of the previous 10 years, to the extent historical data are available in on-site records, and the report must be submitted no later than 12 months after the date of commenced construction, modification, or reconstruction;

(H) Subsequent annual reports must contain items in OAR 340-239-0700(2)(g) (A) through 340-239-0700(2)(g)(F) for the 365-day period following the 365-day period included in the previous annual report, and the report must be submitted no later than 365 days after the date the previous report was submitted; and

(I) Landfills may cease annual reporting of items in paragraphs OAR 340-239-0700(2)(g) (A) through 340-239-0700(2)(g)(F) once they have submitted the Closure Notification in OAR 340-239-0700(3)(a).

(h) Performance Test Report. For a control system designed and operated to meet the requirements of this division, the owner or operator must submit a Performance Test Report that establishes the reduction efficiency or parts per million by volume no later than 180 days after the initial startup of the approved control system using EPA Method 25 or 25C, 40 C.F.R. Part 60, Appendix A, which is incorporated by reference herein. The owner or operator must submit any additional Performance Test Reports within 30 days after the date of completing each performance test, including any associated fuel analyses. The Performance Test Report must meet the following requirements:

(A) The Performance Test Report must include the following information:

(i) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;

(ii) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;

(iii) The documentation of the presence of asbestos or nondecomposable material for each area from which collection wells have been excluded based on the presence of asbestos or nondecomposable material;

(iv) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area;

(v) The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and

(vi) The provisions for the control of off-site migration.

(D) The control device must be operated within the parameter ranges established during the initial or most recent performance test, the most recent permit, or manufacturer written specifications. The operating parameters to be monitored are specified in OAR 340-239-0600(2); and

(i) Collection and Control System Design Plan. The Collection and Control System Design Plan must be prepared and approved by a professional engineer and must meet the following requirements:

(A) The collection and control system as described in the design plan must meet the design requirements in OAR 340-239-0110(1);

(B) If DEQ does not approve or disapprove the Design Plan, or does not request that additional information be submitted within 90 days of receipt, then the owner or operator may continue with implementation of the Design Plan with the recognition that the owner or operator is proceeding at their own risk. In the event that the Design Plan is required to be modified to obtain approval, the owner or operator must take any steps necessary to conform any prior actions to the approved Design Plan; and

(C) If the owner or operator chooses to demonstrate compliance with the emission control requirements of this division using a treatment system as defined in this division, then the owner

or operator must prepare a site-specific treatment system monitoring plan as specified in OAR 340-0110(2)(d)(C).

(j) Amended Design Plan. The owner or operator who has already been required to submit a design plan under OAR 340-239-0110(2) must submit an Amended Design Plan to DEQ within 90 days of any event that requires a change to the Design Plan as follows:

(A) At least 90 days before expanding operations to an area not covered by the previously approved Design Plan; and

(B) Prior to installing, repairing, or expanding the gas collection system in a way that is not consistent with the Design Plan previously approved by DEQ.

(k) Corrective Action reports:

(A) For corrective action that is required according to OAR 340-239-0600(3) and is expected to take longer than 120 days after the initial exceedance to complete, the landfill owner or operator must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to DEQ as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature monitoring value of 55 degrees Celsius (131 degrees Fahrenheit). The owner or operator must receive DEQ approval regarding the plan for corrective action and the corresponding timeline.

(B) For corrective action that is required according to OAR 340-239-0600(3) and is not completed within 60 days after the initial exceedance, the landfill owner or operator must submit a notification to DEQ as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature exceedance.

(C) If a landfill owner or operator cannot fully implement a corrective action described in paragraph (3)(k)(A) or (3)(k)(B) of this rule within 60 days following the positive pressure or excess temperature measurement for which the root cause analysis was required, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the positive pressure measurement.

(l) Instantaneous Surface Emission Monitoring Report.

(A) A landfill owner or operator conducting surface emission monitoring pursuant to OAR 340-239-0100(6)(b) must submit an Instantaneous Surface Monitoring Report within 30 days after the fourth consecutive quarter or monitoring if no exceedances are detected, or 30 days after a measured concentration of methane of 200 ppmv or greater, whichever is first.

(B) An Instantaneous Surface Emissions Monitoring Report required under paragraph (3)(l)(A) or (3)(l)(B) of this rule must include documentation of the following:

(i) Any corrective actions taken as a result of the surface emissions monitoring and clearly identify the location, date and time (to nearest second), average wind speeds including wind gusts, and reading (in parts per million) of concentrations of methane above 100 ppmv, other than non-repeatable, momentary readings. For location, the landfill owner or operator must determine the latitude and longitude coordinates using an instrument with an accuracy of at least four meters. The coordinates must be in decimal degrees with at least five decimal places; and

(ii) The results of the most recent methane generation rate calculation.

(m) 24-hour high temperature report. Where a landfill owner or operator must demonstrate compliance with the operational standard for temperature in OAR 340-239-0600(3)(b), a landfill gas temperature measured at either the wellhead or at any point in the well is greater than or equal to 76.7 degrees Celsius (170 degrees Fahrenheit), and the carbon monoxide concentration measured is greater than or equal to 1,000 ppmv, the owner or operator must report the date, time, well identifier, temperature and carbon monoxide reading to DEQ within 24 hours of the measurement unless a higher operating temperature value has been approved by DEQ for the well.

(n) Repairs and Temporary Shutdown Notification. At least 30 days prior to a scheduled shutdown, any landfill owner or operator that temporarily shuts down a gas collection and control system per OAR 340-239-0110(5) must submit a notification of the shutdown that includes a justification for the shutdown, the system component(s) that will require shutdown, and the approximate timeline for the shutdown. If the shutdown occurred due to catastrophic or other unplanned event as stipulated in OAR 340-239-0110(5), the notification must be submitted within 10 days after the shutdown.

(o) Root Cause Analysis Report. If a landfill owner or operator cannot fully implement a corrective action required according to OAR 340-239-0600(3) within 120 days after the initial exceedance, the landfill owner or operator must submit the root cause analysis and additional analysis and reporting according to OAR 340-239-0700(3)(k) as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature monitoring value of 55 degrees Celsius (131 degrees Fahrenheit). The root cause analysis must include a thorough investigation of the landfill gas collection and control system to determine the primary cause, and any other contributing causes, of positive pressure or high temperature at a wellhead. The report must include all factors investigated, methods used, and alternative causes that were analyzed.

(p) Bioreactor Moisture Content Report. If a landfill owner or operator calculates moisture content to establish the date the bioreactor is required to begin operating the collection and control system, within 90 days after the bioreactor achieves 40-percent moisture content, the landfill owner or operator must submit a Bioreator Moisture Content Report that includes the results of the calculation, the date the bioreactor achieved 40-percent moisture content by weight, and the date the landfill owner or operator will begin collection and control system operation.

(q) Notwithstanding any other provision of this division, when any provision of this division requires that any report, or information be submitted by a landfill owner or operator, the report

must contain certification by a responsible official of the truth, accuracy, and completeness of the report. This certification, and any other certification required under this division, must state that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

(r) Design Capacity Report. An amended design capacity report must be submitted providing notification of an increase in the design capacity of the landfill, within 90 days of an increase in the maximum design capacity of the landfill to meet or exceed 2.5 million megagrams and 2.5 million cubic meters. This increase in design capacity may result from an increase in the permitted volume of the landfill or an increase in the density.

Statutory/Other Authority: ORS 468.020, 468A.025, 468A.040 & 468A.050
Statutes/Other Implemented: ORS 468A.025, 468A.040 & 468A.050

340-239-0800 Test Methods and Procedures
When required as provided in OAR 340-239-0100 through 340-239-0700, the owner or operator of a landfill must comply with the test methods and procedures for monitoring and measurements in this rule.

(1) Hydrocarbon Detector Specifications. Any instrument used for the measurement of methane must be a gas detector, or other equivalent instrument approved by DEQ, that meets the calibration, specifications, and performance criteria of EPA Reference Method 21, Determination of Volatile Organic Compound Leaks, 40 C.F.R. Part 60, Appendix A, except that those rules shall be applied with the following adjustments:

(a) “Methane” replaces all references to volatile organic compounds (VOC);

(b) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air;

(c) To meet the performance evaluation requirements in section 8.1 of Method 21 of 40 C.F.R. Part 60, Appendix A, the instrument evaluation procedures of section 8.1 of Method 21 of 40 C.F.R. Part 60, Appendix A must be used; and

(d) The calibration procedures provided in sections 8 and 10 of Method 21 of 40 C.F.R. Part 60, Appendix A must be followed immediately before commencing a surface monitoring survey.

(2) Determination of methane generation rate. The methane generation rate must include wastes received up to December 31 of the previous year. The methane generation rate must be determined as follows, as applicable:

(a) For Landfills without Carbon Adsorption or Passive Venting Systems, the methane generation rate must be calculated using the procedures specified in 40 C.F.R. § 98.343(a)(1) or 40 C.F.R. 98.463(a)(1). DEQ may request additional information as may be necessary to verify

the methane generation rate from the landfill. Site-specific data may be substituted when available.

(b) For Landfills with Carbon Adsorption Systems, the methane generation rate must be determined by measuring the actual total landfill gas flow rate, in standard cubic feet per minute (scfm), using a flow meter or other flow measuring device such as a standard pitot tube and methane concentration (percent by volume) using a hydrocarbon detector meeting the requirements of OAR 340-239-0800(1). The total landfill gas flow rate must be multiplied by the methane concentration to determine the methane generation rate.

(c) For Landfills with Passive Venting Systems, the methane generation rate must be determined pursuant to both of the following and is the higher of these determined values:

(A) OAR 340-239-0800(2)(a); and

(B) The owner or operator must measure actual landfill gas flow rates (in units of scfm) by using a flow measuring device such as a standard pitot tube and methane concentration (percent by volume) using a hydrocarbon detector meeting the requirements of OAR 340-239-0800(1) from each venting pipe that is within the waste mass. Each gas flow rate must then be multiplied by its corresponding methane concentration to obtain the individual methane flow rate. The individual methane flow rates must be added together to determine the methane generation rate.

(3) Surface Emissions Monitoring Procedures. The landfill owner or operator must measure the landfill surface concentration of methane using a hydrocarbon detector meeting the requirements of OAR 340-239-0800(1). The landfill surface must be inspected and monitored quarterly using all of the following procedures:

(a) Monitoring Area. The entire landfill surface must be divided into individually identified 50,000 square foot grids and include the entire perimeter of the collection area. The grids must be used for both instantaneous and integrated surface emissions monitoring. The monitoring must comply with all of the following requirements:

(A) Surface monitoring must be performed in accordance with section 8.3.1 of EPA Method 21 of appendix A of 40 C.F.R. Part 60, except that the probe inlet must be placed within two inches of the landfill surface while traversing the grid.

(B) The walking pattern must be no more than a 25-foot spacing interval and must traverse each monitoring grid and:

(i) If the owner or operator has no exceedances of the limits specified in OA4R 340-239-0200 after any four consecutive quarterly monitoring periods, the walking pattern spacing may be increased to 100-foot intervals. The owner or operator must return to a 25-foot spacing interval upon any exceedances of the limits specified in OAR 340-239-0200 that cannot be remediated within 10 days or upon any exceedances detected during a DEQ inspection; and

(ii) If an owner or operator of a landfill can demonstrate that in the past three years before the effective date of this division that there were no measured exceedances of the limit specified in OAR 340-239-0200(1)(a) by annual or quarterly monitoring, the owner or operator may increase the walking pattern spacing to 100-foot intervals. The owner or operator must return to a 25-foot spacing interval upon any exceedances of the limits specified in OAR 340-239-0200 that cannot be remediated within 10 days or upon any exceedances detected during a DEQ inspection.

(C) The owner or operator must use a wind barrier, similar to a funnel, when onsite average wind speed exceeds 4 miles per hour or 2 meters per second or gusts exceeding 10 miles per hour. Average on-site wind speed must also be determined in an open area at 5-minute intervals using an on-site anemometer with a continuous recorder and data logger for the entire duration of the monitoring event. The wind barrier must surround the SEM monitor, and must be placed on the ground, to ensure wind turbulence is blocked. SEM cannot be conducted if average wind speed exceeds 25 miles per hour.

(D) Monitoring must be performed during typical meteorological conditions.

(b) Instantaneous Surface Emissions Monitoring Procedures must comply with the following:

(A) The landfill owner or operator must record any instantaneous surface readings of methane 100 ppmv or greater. The landfill owner or operator must document if the reading is a confirmed reading or whether it is a nonrepeatable, momentary reading;

(B) Surface areas of the landfill that exceed a methane concentration limit of 500 ppmv, or 200 ppmv if this is to determine compliance with OAR 340-239-0100(6)(b), must be marked and remediated pursuant to OAR 340-239-0600(1)(a);

(C) Surface areas of the landfill that exceed a methane concentration limit of 250 ppmv, or 100 ppmv if this is to determine compliance with OAR 340-239-0100(6)(b), must be monitored in a five foot grid around the location to determine the extents of the methane leak.;

(D) The wind speed must be recorded during the sampling period;

(E) The landfill surface areas with cover penetrations, distressed vegetation, cracks or seeps must also be inspected visually and with a hydrocarbon detector meeting the requirements of OAR 340-239-0800(1). If a landfill would not be subject to quarterly penetration monitoring as otherwise required pursuant to another state or federal regulation such as, including: OAR 340-236-0500, 40 C.F.R. Part 63 Subpart AAAA, 40 C.F.R. 60 Subpart WWW or XXX, and if no methane is detected with the hydrocarbon detector at a specific penetration point for four consecutive quarters, then the landfill may reduce monitoring to annually at that penetration. If any methane concentration is detected during annual monitoring, the penetration location must return to quarterly monitoring; and

(F) The location of each monitored exceedance must be marked and the location and concentration recorded. The location must be recorded using an instrument with an accuracy of at least four meters. The coordinates must be in decimal degrees with at least five decimal places.

(c) Integrated Surface Emissions Monitoring Procedures must comply with the following:

(A) Integrated surface readings must be recorded and then averaged for each grid;

(B) Individual monitoring grids that exceed an average methane concentration of 25 ppmv must be identified and remediated pursuant to OAR 340-239-0600(1)(b); and

(C) The wind speed must be recorded during the sampling period.

(4) Gas Collection and Control System Leak Inspection Procedures. Landfill owners and operators must measure leaks using a hydrocarbon detector meeting the requirements of OAR 340-239-0800(1).

(5) Determination of Expected Gas Generation Flow Rate. Landfill owners and operators must determine the expected gas generation flow rate as prescribed in 40 C.F.R. §§ 98.343(1)(a) or 63.1960(a)(1), which are incorporated by reference herein.

(6) Control Device Destruction Efficiency Determination. Landfill owners and operators must use the following methods of analysis to determine the efficiency of the control device in reducing methane:

(a) For Enclosed Combustors, one of the following test methods, all of which are incorporated by reference herein (and all as promulgated in 40 C.F.R., Part 60, Appendix A), must be used to determine the efficiency of the control device in reducing methane by at least 99 percent, or in reducing the outlet methane concentration for lean burn engines to less than 3,000 ppmv, dry basis, corrected to 15 percent oxygen:

(A) U.S. EPA Reference Method 18, Measurement of Gaseous Organic Compound Emissions By Gas Chromatography;

(B) U.S. EPA Reference Method 25, Determination of Total Gaseous Nonmethane Organic Emissions as Carbon. EPA Reference Method 25A, Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer; or

(C) U.S. EPA Reference Method 25C, Determination of Nonmethane Organic Compounds in Landfill Gases;

(b) The following equation must be used to calculate destruction efficiency:

Destruction Efficiency = [1-(Mass of Methane_outlet)/(Mass of Methane_inlet)]x100%

(7) Wellhead monitoring.

(a) Landfill owners and operators must determine wellhead nitrogen levels using EPA Reference Method 3C, Determination of Volatile Organic Compound Leaks, 40 C.F.R. Part 60, Appendix A, unless an alternative test method is approved by DEQ.

(b) Unless an alternative test method is established and approved by DEQ, landfill owners and operators must determine wellhead oxygen levels by an oxygen meter using EPA Reference Method 3A or 3C, 40 C.F.R. Part 60, Appendix A, or ASTM D6522-20, except that, if sample location is prior to combustion:

(A) The span must be set between 10 and 12 percent oxygen;

(B) A data recorder is not required;

(C) Only two calibration gases are required, a zero and span;

(D) A calibration error check is not required; and

(E) The allowable sample bias, zero drift, and calibration drift are ±10 percent.

(c) Landfill owners and operators may use a portable gas composition analyzer to monitor wellhead oxygen levels provided that the analyzer is calibrated and the analyzer meets all quality assurance and quality control requirements for 40 C.F.R. Part 60, Appendix A-1, Method 3A or ASTM D6522-11.

(d) Determination of Gauge Pressure. Landfill owners and operators must determine wellhead gauge pressure using a hand-held manometer, magnahelic gauge, or other pressure measuring device approved by DEQ. The device must be calibrated and operated in accordance with the manufacturer's specifications.

(e) Landfill owners and operators must calibrate wellhead temperature measuring devices annually using the procedure in 40 C.F.R. Part 60, Appendix A-1, Method 2, Section 10.3 except that a minimum of two temperature points, bracket within 10 percent of all landfill absolute temperature measurements or two fixed points of ice bath and boiling water, corrected for barometric pressure, are used.

(8) Enhanced monitoring. The landfill owner or operator must initiate enhanced monitoring at each well with a measurement of landfill gas temperature greater than 62.8 degrees Celsius (145 degrees Fahrenheit) as follows:

(a) Visual observations for subsurface oxidation events (smoke, smoldering ash, damage to well) within the radius of influence of the well;

(b) Monitor oxygen or nitrogen concentration as provided in OAR 340-239-0110(3)(a);

(c) Monitor temperature of the landfill gas at the wellhead as provided in OAR 340-239-0600(3);

(d) Monitor temperature of the landfill gas every 10 vertical feet of the well as provided in OAR 340-239-0600(3);

(e) Monitor the methane concentration with a methane meter using EPA Method 3C of Appendix A-6 to 40 C.F.R. Part 60, EPA Method 18 of Appendix A-6 to 40 C.F.R. part 60, or a portable

gas composition analyzer to monitor the methane levels provided that the analyzer is calibrated and the analyzer meets all quality assurance and quality control requirements for EPA Method 3C or EPA Method 18;

(f) Monitor carbon monoxide concentrations, as follows:

(A) Collect the sample from the wellhead sampling port in a passivated canister or multi-layer foil gas sampling bag (such as the Cali-5-Bond Bag) and analyze that sample using EPA Method 10, 40 C.F.R. Part 60, Appendix A-4, or an equivalent method with a detection limit of at least 100 ppmv of carbon monoxide in high concentrations of methane; and

(B) Collect and analyze the sample from the wellhead using EPA Method 10, 40 C.F.R. Part 60, Appendix A-4 to measure carbon monoxide concentrations;

(g) The enhanced monitoring must begin 7 days after the first measurement of landfill gas temperature greater than 62.8 degrees Celsius (145 degrees Fahrenheit);

(h) The enhanced monitoring must be conducted on a weekly basis. If four consecutive weekly carbon monoxide readings are under 100 ppmv, then enhanced monitoring may be decreased to monthly. If monthly carbon monoxide readings exceed 100 ppmv, the landfill must return to weekly monitoring;

(i) The enhanced monitoring can be stopped once a higher operating value is approved, at which time the monitoring provisions issued with the higher operating value must be followed, or once the measurement of landfill gas temperature at the wellhead is less than or equal to 62.8 degrees Celsius (145 degrees Fahrenheit); and

(j) For each wellhead with a measurement of landfill gas temperature greater than or equal to 73.9 degrees Celsius (165 degrees Fahrenheit), annually monitor temperature of the landfill gas every 10 vertical feet of the well. This temperature can be monitored either with a removable thermometer, or using temporary or permanent thermocouples installed in the well.

(9) Bioreactor moisture content. The bioreactor moisture content calculation must consider the waste mass, moisture content of the incoming waste, mass of water added to the waste including leachate recirculation and other liquids addition and precipitation, and the mass of water removed through leachate or other water losses. Moisture level sampling or mass balances. The landfill owner or operator must document the calculations and the basis of any assumptions. Keep the record of the calculations until liquids addition ceases.

(10) Alternative Test Methods. Notwithstanding any other provision in this division, landfill owners and operators may use alternative test methods for any of the test methods described in this rule provided that the alternative methods are approved in writing by DEQ pursuant to OAR 340-239-0500.

Statutory/Other Authority: ORS 468.020, 468A.025, 468A.040 & 468A.050
Statutes/Other Implemented: ORS 468A.025, 468A.040 & 468A.050

Key to changes:

~~Strikethrough: Text removed~~
Underline: New text added

Division 12
ENFORCEMENT PROCEDURE AND CIVIL PENALTIES

340-012-0054
Air Quality Classification of Violations

(1) **Class I**:

(a) Constructing a new source or modifying an existing source without first obtaining a required New Source Review/Prevention of Significant Deterioration (NSR/PSD) permit;

(b) Constructing a new source, as defined in OAR 340-245-0020, without first obtaining a required Air Contaminant Discharge Permit that includes permit conditions required under OAR 340-245-0005 through 340-245-8050 or without complying with Cleaner Air Oregon rules under OAR 340-245-0005 through 340-245-8050;

(c) Failing to conduct a source risk assessment, as required under OAR 340-245-0050;

(d) Modifying a source in such a way as to require a permit modification under OAR 340-245-0005 through 340-245-8050, that would increase risk above permitted levels under OAR 340-245-0005 through 340-245-8050 without first obtaining such approval from DEQ;

(e) Operating a major source, as defined in OAR 340-200-0020, without first obtaining the required permit;

(f) Operating an existing source, as defined in OAR 340-245-0020, after a submittal deadline under OAR 340-245-0030 without having submitted a complete application for a Toxic Air Contaminant Permit Addendum required under OAR 340-245-0005 through 340-245-8050;

(g) Exceeding a Plant Site Emission Limit (PSEL);

(h) Exceeding a risk limit, including a Source Risk Limit, applicable to a source under OAR 340-245-0100;

(i) Failing to install control equipment or meet emission limits, operating limits, work practice requirements, or performance standards as required by New Source Performance Standards under OAR 340 division 238 or National Emission Standards for Hazardous Air Pollutant Standards under OAR 340 division 244;

(j) Exceeding a hazardous air pollutant emission limitation;

(k) Failing to comply with an Emergency Action Plan;

(l) Exceeding an opacity or emission limit (including a grain loading standard) or violating an operational or process standard, that was established under New Source Review/Prevention of Significant Deterioration (NSR/PSD);

(m) Exceeding an emission limit or violating an operational or process standard that was established to limit emissions to avoid classification as a major source, as defined in OAR 340-200-0020;

(n) Exceeding an emission limit or violating an operational limit, process limit, or work practice requirement that was established to limit risk or emissions to avoid exceeding an applicable Risk Action Level or other requirement under OAR 340-245-0005 through 340-245-8050;

(o) Exceeding an emission limit, including a grain loading standard, by a major source, as defined in OAR 340-200-0020, when the violation was detected during a reference method stack test;

(p) Failing to perform testing or monitoring, required by a permit, permit attachment, rule or order, that results in failure to show compliance with a Plant Site Emission Limit or with an emission limitation or a performance standard established under New Source Review/Prevention of Significant Deterioration, National Emission Standards for Hazardous Air Pollutants, New Source Performance Standards, Reasonably Available Control Technology, Best Available Control Technology, Maximum Achievable Control Technology, Typically Achievable Control Technology, Lowest Achievable Emission Rate, Toxics Best Available Control Technology, Toxics Lowest Achievable Emission Rate, or adopted under section 111(d) of the Federal Clean Air Act;

(q) Causing emissions that are a hazard to public safety;

(r) Violating a work practice requirement for asbestos abatement projects;

(s) Improperly storing or openly accumulating friable asbestos material or asbestos-containing waste material;

(t) Conducting an asbestos abatement project, by a person not licensed as an asbestos abatement contractor;

(u) Violating an OAR 340 division 248 disposal requirement for asbestos-containing waste material;

(v) Failing to hire a licensed contractor to conduct an asbestos abatement project;

(w) Openly burning materials which are prohibited from being open burned anywhere in the state by OAR 340-264-0060(3), or burning materials in a solid fuel burning device, fireplace, trash burner or other device as prohibited by OAR 340-262-0900(1);

(x) Failing to install certified vapor recovery equipment;

(y) Delivering for sale a noncompliant vehicle by an automobile manufacturer in violation of Oregon Low Emission Vehicle rules set forth in OAR 340 division 257;

(z) Exceeding an Oregon Low Emission Vehicle average emission limit set forth in OAR 340 division 257;

(aa) Failing to comply with Zero Emission Vehicle (ZEV) sales requirements set forth in OAR 340 division 257;

(bb) Failing to obtain a Motor Vehicle Indirect Source Permit as required in OAR 340 division 257;

(cc) Selling, leasing, or renting a noncompliant vehicle by an automobile dealer or rental car agency in violation of Oregon Low Emission Vehicle rules set forth in OAR 340 division 257;

(dd) Failing to comply with any of the clean fuel standards set forth in OAR 340-253-0100(6) and Tables 1 and 2 of OAR 340-253-8010;

(ee) Committing any action related to a credit transfer that is prohibited in OAR 340-253-1005(8);

(ff) Inaccurate reporting that causes illegitimate credits to be generated in the Oregon Clean Fuels Program, OAR chapter 340, division 253, or that understates a regulated party's true compliance obligation denominated in deficits under such program;

(gg) Making misstatements about material information or knowingly or recklessly providing false information when submitting an application for a carbon intensity score under OAR 340-253-0450;

(hh) Failing to timely submit a complete and accurate annual compliance report under OAR 340-253-0100(8);

(ii) Failing to timely submit a complete and accurate emissions data report under OAR 340-215-0044 and OAR 340-215-0046; (jj) Submitting a verification statement to DEQ prepared by a person not approved by DEQ under OAR 340-272-0220 to perform verification services;

(kk) Failing to timely submit a verification statement that meets the verification requirements under OAR 340-272-0100 and OAR 340-272-0495;

(ll) Failing to submit a revised application or report to DEQ according to OAR 340-272-0435; ~~or~~

(mm) Failing to complete re-verification according to OAR 340-272-0350(2);~~.~~

(nn) Failing to timely submit a Methane Generation Rate Report or Instantaneous Surface Monitoring Report according to OAR 340-239-0105;

(oo) Failing to timely submit a Design Plan or Amended Design Plan in accordance with OAR 340-239-0110(1);

(pp) Failing to timely install and operate a landfill gas collection and control system according to OAR 340-239-0110(1);

(qq) Failing to operate a landfill gas collection and control system or conduct performance testing of a landfill gas control device according to the requirements in OAR 340-239-0110(2);

(rr) Failing to conduct landfill wellhead sampling under OAR 340-239-0110(3);

(ss) Failing to comply with a landfill compliance standard in OAR 340-239-0200;

(tt) Failing to conduct monitoring or remonitoring in accordance with OAR 340-239-0600 that results in a failure to demonstrate compliance with a landfill compliance standard in OAR 340-239-0200 or the 200 ppmv threshold in OAR 340-239-0105(5)(b) or OAR 340-239-0400(2)(c);

(uu) Failure to take corrective actions in accordance with OAR 340-239-0600(1); or

(vv) Failing to comply with a landfill gas collection and control system permanent shutdown and removal requirement in OAR 340-239-0400(1).

(2) **Class II**:

(a) Constructing or operating a source required to have an Air Contaminant Discharge Permit (ACDP), ACDP attachment, or registration without first obtaining such permit or registration, unless otherwise classified;

(b) Violating the terms or conditions of a permit, permit attachment or license, unless otherwise classified;

(c) Modifying a source in such a way as to require a permit or permit attachment modification from DEQ without first obtaining such approval from DEQ, unless otherwise classified;

(d) Exceeding an opacity limit, unless otherwise classified;

(e) Exceeding a Volatile Organic Compound (VOC) emission standard, operational requirement, control requirement or VOC content limitation established by OAR 340 division 232;

(f) Failing to timely submit a complete ACDP annual report or permit attachment annual report;

(g) Failing to timely submit a certification, report, or plan as required by rule, permit or permit attachment, unless otherwise classified;

(h) Failing to timely submit a complete permit application, ACDP attachment application, or permit renewal application;

(i) Failing to submit a timely and complete toxic air contaminant emissions inventory as required under OAR 340-245-0005 through 340-245-8050;

(j) Failing to comply with the open burning requirements for commercial, construction, demolition, or industrial wastes in violation of OAR 340-264-0080 through 0180;

(k) Failing to comply with open burning requirements in violation of any provision of OAR 340 division 264, unless otherwise classified; or burning materials in a solid fuel burning device, fireplace, trash burner or other device as prohibited by OAR 340-262-0900(2).

(l) Failing to replace, repair, or modify any worn or ineffective component or design element to ensure the vapor tight integrity and efficiency of a stage I or stage II vapor collection system;

(m) Failing to provide timely, accurate or complete notification of an asbestos abatement project;

(n) Failing to perform a final air clearance test or submit an asbestos abatement project air clearance report for an asbestos abatement project;

(o) Violating on road motor vehicle refinishing rules contained in OAR 340-242-0620;

(p) Failing to comply with an Oregon Low Emission Vehicle reporting, notification, or warranty requirement set forth in OAR division 257;

(q) Failing to register as a regulated party in the Oregon Clean Fuels Program under OAR 340-253-0100(1) and (4), when the person is a producer or importer of blendstocks, as defined in OAR 340-253-0040;

(r) Failing to register as an aggregator or submit an aggregator designation form under OAR 340-253-0100(3) and (4)(c);

(s) Failing to keep records under OAR 340-253-0600 when the records relate to obtaining a carbon intensity under OAR 340-253-0450;

(t) Failing to keep records related to obtaining a carbon intensity under OAR 340-253-0450;

(u) Failing to timely submit a complete and accurate quarterly report under OAR 340-253-0100(7); ~~or~~

(v) Violating any requirement under OAR Chapter 340 division 272, unless otherwise classified; or~~.~~

(w) Violating any requirement under OAR 340, division 239, unless otherwise classified.

(3) **Class III**:

(a) Failing to perform testing or monitoring required by a permit, rule or order where missing data can be reconstructed to show compliance with standards, emission limitations or underlying requirements;

(b) Constructing or operating a source required to have a Basic Air Contaminant Discharge Permit without first obtaining the permit;

(c) Modifying a source in such a way as to require construction approval from DEQ without first obtaining such approval from DEQ, unless otherwise classified;

(d) Failing to revise a notification of an asbestos abatement project when necessary, unless otherwise classified;

(e) Submitting a late air clearance report that demonstrates compliance with the standards for an asbestos abatement project;

(f) Licensing a noncompliant vehicle by an automobile dealer or rental car agency in violation of Oregon Low Emission Vehicle rules set forth in OAR 340 division 257;

(g) Failing to register as a regulated party in the Oregon Clean Fuels Program under OAR 340-253-0100(1) and (4), when the person is an importer of finished fuels, as defined in OAR 340-253-0040; or

(h) Failing to keep records under OAR 340-253-0600, except as provided in subsection (2)(s).

Note: Tables and Publications referenced are available from the agency.

Statutory/Other Authority: ORS 468.020, 468A.025 & 468A.045
Statutes/Other Implemented: ORS 468.020 & 468A.025
History:
DEQ 14-2020, amend filed 05/07/2020, effective 05/07/2020
DEQ 199-2018, amend filed 11/16/2018, effective 01/01/2019
DEQ 197-2018, amend filed 11/16/2018, effective 11/16/2018
DEQ 13-2015, f. 12-10-15, cert. ef. 1-1-16
DEQ 1-2014, f. & cert. ef. 1-6-14
DEQ 2-2011, f. 3-10-11, cert. ef. 3-15-11
DEQ 6-2006, f. & cert. ef. 6-29-06
DEQ 4-2006, f. 3-29-06, cert. ef. 3-31-06
Renumbered from 340-012-0050, DEQ 4-2005, f. 5-13-05, cert. ef. 6-1-05
DEQ 6-2001, f. 6-18-01, cert. ef. 7-1-01
DEQ 19-1998, f. & cert. ef. 10-12-98
DEQ 22-1996, f. & cert. ef. 10-22-96

DEQ 21-1994, f. & cert. ef. 10-14-94
DEQ 13-1994, f. & cert. ef. 5-19-94
DEQ 4-1994, f. & cert. ef. 3-14-94
DEQ 20-1993(Temp), f. & cert. ef. 11-4-93
DEQ 19-1993, f. & cert. ef. 11-4-93
DEQ 21-1992, f. & cert. ef. 8-11-92
DEQ 2-1992, f. & cert. ef. 1-30-92
DEQ 31-1990, f. & cert. ef. 8-15-90
DEQ 15-1990, f. & cert. ef. 3-30-90
DEQ 4-1989, f. & cert. ef. 3-14-89
DEQ 22-1988, f. & cert. ef. 9-14-88
DEQ 22-1984, f. & ef. 11-8-84
DEQ 5-1980, f. & ef. 1-28-80
DEQ 78, f. 9-6-74, ef. 9-25-74

340-012-0135
Selected Magnitude Categories

(1) Magnitudes for selected Air Quality violations will be determined as follows:

(a) Opacity limit violations:

(A) Major — Opacity measurements or readings of 20 percent opacity or more over the applicable limit, or an opacity violation by a federal major source as defined in OAR 340-200-0020;

(B) Moderate — Opacity measurements or readings greater than 10 percent opacity and less than 20 percent opacity over the applicable limit; or

(C) Minor — Opacity measurements or readings of 10 percent opacity or less over the applicable limit.

(b) Operating a major source, as defined in OAR 340-200-0020, without first obtaining the required permit: Major — if a Lowest Achievable Emission Rate (LAER) or Best Available Control Technology (BACT) analysis shows that additional controls or offsets are or were needed, otherwise apply OAR 340-012-0130.

(c) Exceeding an emission limit established under New Source Review/Prevention of Significant Deterioration (NSR/PSD): Major — if exceeded the emission limit by more than 50 percent of the limit, otherwise apply OAR 340-012-0130.

(d) Exceeding an emission limit established under federal National Emission Standards for Hazardous Air Pollutants (NESHAPs): Major — if exceeded the Maximum Achievable Control Technology (MACT) standard emission limit for a directly-measured hazardous air pollutant (HAP), otherwise apply OAR 340-012-0130.

(e) Exceeding a cancer or noncancer risk limit that is equivalent to a Risk Action Level or a Source Risk Limit if the limit is a Risk Action Level established under OAR 340-245-0005 through 340-245-8050: Major, otherwise apply OAR 340-012-0130.

(f) Air contaminant emission limit violations for selected air pollutants: Magnitude determinations under this subsection will be made based upon significant emission rate (SER) amounts listed in OAR 340-200-0020.

(A) Major:

(i) Exceeding the annual emission limit as established by permit, rule or order by more than the annual SER; or

(ii) Exceeding the short-term (less than one year) emission limit as established by permit, rule or order by more than the applicable short-term SER.

(B) Moderate:

(i) Exceeding the annual emission limit as established by permit, rule or order by an amount from 50 up to and including 100 percent of the annual SER; or

(ii) Exceeding the short-term (less than one-year) emission limit as established by permit, rule or order by an amount from 50 up to and including 100 percent of the applicable short-term SER.

(C) Minor:

(i) Exceeding the annual emission limit as established by permit, rule or order by an amount less than 50 percent of the annual SER; or

(ii) Exceeding the short-term (less than one year) emission limit as established by permit, rule or order by an amount less than 50 percent of the applicable short-term SER.

(g) Violations of Emergency Action Plans: Major — Major magnitude in all cases.

(h) Violations of on road motor vehicle refinishing rules contained in OAR 340-242-0620: Minor — Refinishing 10 or fewer on road motor vehicles per year.

(i) Asbestos violations — These selected magnitudes apply unless the violation does not cause the potential for human exposure to asbestos fibers:

(A) Major — More than 260 linear feet or more than 160 square feet of asbestos-containing material or asbestos-containing waste material;

(B) Moderate — From 40 linear feet up to and including 260 linear feet or from 80 square feet up to and including 160 square feet of asbestos-containing material or asbestos-containing waste material; or

(C) Minor — Less than 40 linear feet or 80 square feet of asbestos-containing material or asbestos-containing waste material.

(D) The magnitude of the asbestos violation may be increased by one level if the material was comprised of more than five percent asbestos.

(j) Open burning violations:

(A) Major — Initiating or allowing the initiation of open burning of 20 or more cubic yards of commercial, construction, demolition and/or industrial waste; or 5 or more cubic yards of prohibited materials (inclusive of tires); or 10 or more tires;

(B) Moderate — Initiating or allowing the initiation of open burning of 10 or more, but less than 20 cubic yards of commercial, construction, demolition and/or industrial waste; or 2 or more, but less than 5 cubic yards of prohibited materials (inclusive of tires); or 3 to 9 tires; or if DEQ lacks sufficient information upon which to make a determination of the type of waste, number of cubic yards or number of tires burned; or

(C) Minor — Initiating or allowing the initiation of open burning of less than 10 cubic yards of commercial, construction, demolition and/or industrial waste; or less than 2 cubic yards of prohibited materials (inclusive of tires); or 2 or less tires.

(D) The selected magnitude may be increased one level if DEQ finds that one or more of the following are true, or decreased one level if DEQ finds that none of the following are true:

(i) The burning took place in an open burning control area;

(ii) The burning took place in an area where open burning is prohibited;

(iii) The burning took place in a non-attainment or maintenance area for PM10 or PM2.5; or

(iv) The burning took place on a day when all open burning was prohibited due to meteorological conditions.

(k) Oregon Low Emission Vehicle Non-Methane Gas (NMOG) or Green House Gas (GHG) fleet average emission limit violations:

(A) Major — Exceeding the limit by more than 10 percent; or

(B) Moderate — Exceeding the limit by 10 percent or less.

(l) Oregon Clean Fuels Program violations:

(A) Exceeding the clean fuel standards set forth in OAR 340-253-0100(6) and Tables 1 and 2 of 340-253-8010 by not retiring sufficient credits to satisfy a regulated party’s compliance obligation:

(i) Major — more than 15 percent of their total deficit obligation remains unsatisfied;

(ii) Moderate — more than 10 percent but less than 15 percent of their total deficit obligation remains unsatisfied; or

(iii) Minor —less than 10 percent of their total deficit obligation remains unsatisfied.

(B) Failing to register under OAR 340-253-0100(1) and (4): Moderate — producers and importers of blendstocks;

(C) Failing to submit an aggregator designation form under OAR 340-253-0100(3) and (4)(c): Minor;

(D) Failing to keep records as set forth in OAR 340-253-0600, when the records relate to obtaining a carbon intensity under OAR 340-253-04500600: Minor;

(E) Failing to submit a complete and accurate annual compliance report or quarterly report under OAR chapter 340 division 253: Moderate;

(F) Failing to timely submit a complete and accurate annual compliance report or quarterly report under OAR chapter 340, division 253: Minor.

(m) Oregon Greenhouse Gas Reporting Program violations:

(A) Failing to submit a complete and accurate emissions data report under OAR chapter 340, division 215: Moderate;

(B) Failing to timely submit a complete and accurate emissions data report under OAR chapter 340, division 215: Minor.

340-012-0140
Determination of Base Penalty

(1) Except for Class III violations and as provided in OAR 340-012-0155, the base penalty (BP) is determined by applying the class and magnitude of the violation to the matrices set forth in this section. For Class III violations, no magnitude determination is required.

(2) $12,000 Penalty Matrix:

(a) The $12,000 penalty matrix applies to the following:

(A) Any violation of an air quality statute, rule, permit or related order committed by a person that has or should have a Title V permit or an Air Contaminant Discharge Permit (ACDP) issued

pursuant to New Source Review (NSR) regulations or Prevention of Significant Deterioration (PSD) regulations, or section 112(g) of the federal Clean Air Act, unless otherwise classified.

(B) Open burning violations as follows:

(i) Any violation of OAR 340-264-0060(3) committed by an industrial facility operating under an air quality permit.

(ii) Any violation of OAR 340-264-0060(3) in which 25 or more cubic yards of prohibited materials or more than 15 tires are burned, except when committed by a residential owner-occupant.

(C) Any violation of the Oregon Low Emission Vehicle rules (OAR 340-257) by an automobile manufacturer.

(D) Any violation of ORS 468B.025(1)(a) or (1)(b), or of 468B.050(1)(a) by a person without a National Pollutant Discharge Elimination System (NPDES) permit, unless otherwise classified.

(E) Any violation of a water quality statute, rule, permit or related order by:

(i) A person that has an NPDES permit, or that has or should have a Water Pollution Control Facility (WPCF) permit, for a municipal or private utility sewage treatment facility with a permitted flow of five million or more gallons per day.

(ii) A person that has a Tier 1 industrial source NPDES or WPCF permit.

(iii) A person that has a population of 100,000 or more, as determined by the most recent national census, and either has or should have a WPCF Municipal Stormwater Underground Injection Control (UIC) System Permit, or has an NPDES Municipal Separated Storm Sewer Systems (MS4) Stormwater Discharge Permit.

(iv) A person that installs or operates a prohibited Class I, II, III, IV or V UIC system, except for a cesspool.

(v) A person that has or should have applied for coverage under an NPDES Stormwater Discharge 1200-C General Permit for a construction site that disturbs 20 or more acres.

(F) Any violation of the ballast water statute in ORS Chapter 783 or ballast water management rule in OAR 340, division 143.

(G) Any violation of a Clean Water Act Section 401 Water Quality Certification by a 100 megawatt or more hydroelectric facility.

(H) Any violation of a Clean Water Act Section 401 Water Quality Certification for a dredge and fill project except for Tier 1, 2A or 2B projects.

(I) Any violation of an underground storage tanks statute, rule, permit or related order committed by the owner, operator or permittee of 10 or more UST facilities or a person who is licensed or should be licensed by DEQ to perform tank services.

(J) Any violation of a heating oil tank statute, rule, permit, license or related order committed by a person who is licensed or should be licensed by DEQ to perform heating oil tank services.

(K) Any violation of ORS 468B.485, or related rules or orders regarding financial assurance for ships transporting hazardous materials or oil.

(L) Any violation of a used oil statute, rule, permit or related order committed by a person who is a used oil transporter, transfer facility, processor or re-refiner, off-specification used oil burner or used oil marketer.

(M) Any violation of a hazardous waste statute, rule, permit or related order by:

(i) A person that is a large quantity generator or hazardous waste transporter.

(ii) A person that has or should have a treatment, storage or disposal facility permit.

(N) Any violation of an oil and hazardous material spill and release statute, rule, or related order committed by a covered vessel or facility as defined in ORS 468B.300 or by a person who is engaged in the business of manufacturing, storing or transporting oil or hazardous materials.

(O) Any violation of a polychlorinated biphenyls (PCBs) management and disposal statute, rule, permit or related order.

(P) Any violation of ORS Chapter 465, UST or environmental cleanup statute, rule, related order or related agreement.

(Q) Unless specifically listed under another penalty matrix, any violation of ORS Chapter 459 or any violation of a solid waste statute, rule, permit, or related order committed by:

(i) A person that has or should have a solid waste disposal permit.

(ii) A person with a population of 25,000 or more, as determined by the most recent national census.

(R) Any violation of the Oregon Clean Fuels Program under OAR Chapter 340, division 253 by a person registered as an importer of blendstocks,

(S) Any violation classified under OAR 340-012-0054 (1) (ee), (ff), or (gg).

(T) Any violation of the Oregon Greenhouse Gas Reporting Program under OAR Chapter 340, division 215 by a person with greenhouse gas emissions greater than or equal to 25,000 metric tons per year or by a person that has not reported greenhouse gas emissions to DEQ during the

past five years, or by a person for which DEQ has insufficient information to accurately estimate emissions.

(U) Any violation of the Third Party Verification rules under OAR Chapter 340, division 272.

(V) Any violation of the Landfill Gas Emissions rules under OAR Chapter 340, division 239 by a person required to comply with OAR 340-239-0110 through OAR 340-239-0800.

(b) The base penalty values for the $12,000 penalty matrix are as follows:

(A) Class I:

(i) Major — $12,000;

(ii) Moderate — $6,000;

(iii) Minor — $3,000.

(B) Class II:

(i) Major — $6,000;

(ii) Moderate — $3,000;

(iii) Minor — $1,500.

(C) Class III: $1,000.

(3) $8,000 Penalty Matrix:

(a) The $8,000 penalty matrix applies to the following:

(A) Any violation of an air quality statute, rule, permit, permit attachment, or related order committed by a person that has or should have an ACDP permit, except for NSR, PSD and Basic ACDP permits, unless listed under another penalty matrix, unless otherwise classified.

(B) Any violation of an asbestos statute, rule, permit or related order except those violations listed in section (5) of this rule.

(C) Any violation of a vehicle inspection program statute, rule, permit or related order committed by an auto repair facility.

(D) Any violation of the Oregon Low Emission Vehicle rules (OAR 340-257) committed by an automobile dealer or an automobile rental agency.

(E) Any violation of a water quality statute, rule, permit or related order committed by:

(i) A person that has an NPDES Permit, or that has or should have a WPCF Permit, for a municipal or private utility sewage treatment facility with a permitted flow of two million or more, but less than five million, gallons per day.

(ii) A person that has a Tier 2 industrial source NPDES or WPCF Permit.

(iii) A person that has or should have applied for coverage under an NPDES or a WPCF General Permit, except an NPDES Stormwater Discharge 1200-C General Permit for a construction site of less than five acres in size or 20 or more acres in size.

(iv) A person that has a population of less than 100,000 but more than 10,000, as determined by the most recent national census, and has or should have a WPCF Municipal Stormwater UIC System Permit or has an NPDES MS4 Stormwater Discharge Permit.

(v) A person that owns, and that has or should have registered, a UIC system that disposes of wastewater other than stormwater or sewage or geothermal fluids.

(F) Any violation of a Clean Water Act Section 401 Water Quality Certification by a less than 100 megawatt hydroelectric facility.

(G) Any violation of a Clean Water Act Section 401 Water Quality Certification for a Tier 2A or Tier 2B dredge and fill project.

(H) Any violation of an UST statute, rule, permit or related order committed by a person who is the owner, operator or permittee of five to nine UST facilities.

(I) Unless specifically listed under another penalty matrix, any violation of ORS Chapter 459 or other solid waste statute, rule, permit, or related order committed by:

(i) A person that has or should have a waste tire permit; or

(ii) A person with a population of more than 5,000 but less than or equal to 25,000, as determined by the most recent national census.

(J) Any violation of a hazardous waste management statute, rule, permit or related order committed by a person that is a small quantity generator.

(K) Any violation of an oil and hazardous material spill and release statute, rule, or related order committed by a person other than a person listed in OAR 340-012-0140(2)(a)(N) occurring during a commercial activity or involving a derelict vessel over 35 feet in length.

(L) Any violation of the Oregon Clean Fuels Program under OAR Chapter 340, division 253 by a person registered as a credit generator, an aggregator, or a registered fuel producer unless the violation is otherwise classified in this rule.

(M) Any violation of the Oregon Greenhouse Gas Reporting Program under OAR Chapter 340, division 215 by a person with greenhouse gas emissions less than 25,000 metric tons per year but greater than or equal to 5,000 metric tons per year.

(N) Any violation of the Landfill Gas Emissions rules under OAR Chapter 340, division 239 by a person that owns or operates a landfill with over 200,000 tons waste in place and is not required to comply with OAR 340-239-0110 through OAR 340-239-0800.

(b) The base penalty values for the $8,000 penalty matrix are as follows:

(A) Class I:

(i) Major — $8,000.

(ii) Moderate — $4,000.

(iii) Minor — $2,000.

(B) Class II:

(i) Major — $4,000.

(ii) Moderate — $2,000.

(iii) Minor — $1,000.

(C) Class III: $ 700.

(4) $3,000 Penalty Matrix:

(a) The $3,000 penalty matrix applies to the following:

(A) Any violation of any statute, rule, permit, license, or order committed by a person not listed under another penalty matrix.

(B) Any violation of an air quality statute, rule, permit, permit attachment, or related order committed by a person not listed under another penalty matrix.

(C) Any violation of an air quality statute, rule, permit, permit attachment, or related order committed by a person that has or should have a Basic ACDP or an ACDP or registration only because the person is subject to Area Source NESHAP regulations.

(D) Any violation of OAR 340-264-0060(3) in which 25 or more cubic yards of prohibited materials or more than 15 tires are burned by a residential owner-occupant.

(E) Any violation of a vehicle inspection program statute, rule, permit or related order committed by a natural person, except for those violations listed in section (5) of this rule.

(F) Any violation of a water quality statute, rule, permit, license or related order not listed under another penalty matrix and committed by:

(i) A person that has an NPDES permit, or has or should have a WPCF permit, for a municipal or private utility wastewater treatment facility with a permitted flow of less than two million gallons per day.

(ii) A person that has or should have applied for coverage under an NPDES Stormwater Discharge 1200-C General Permit for a construction site that is more than one, but less than five acres.

(iii) A person that has a population of 10,000 or less, as determined by the most recent national census, and either has an NPDES MS4 Stormwater Discharge Permit or has or should have a WPCF Municipal Stormwater UIC System Permit.

(iv) A person who is licensed to perform onsite sewage disposal services or who has performed sewage disposal services.

(v) A person, except for a residential owner-occupant, that owns and either has or should have registered a UIC system that disposes of stormwater, sewage or geothermal fluids.

(vi) A person that has or should have a WPCF individual stormwater UIC system permit.

(vii) Any violation of a water quality statute, rule, permit or related order committed by a person that has or should have applied for coverage under an NPDES 700-PM General Permit for suction dredges.

(G) Any violation of an onsite sewage disposal statute, rule, permit or related order, except for a violation committed by a residential owner-occupant.

(H) Any violation of a Clean Water Act Section 401 Water Quality Certification for a Tier 1 dredge and fill project.

(I) Any violation of an UST statute, rule, permit or related order if the person is the owner, operator or permittee of two to four UST facilities.

(J) Any violation of a used oil statute, rule, permit or related order, except a violation related to a spill or release, committed by a person that is a used oil generator.

(K) Any violation of a hazardous waste management statute, rule, permit or related order committed by a person that is a conditionally exempt generator, unless listed under another penalty matrix.

(L) Any violation of ORS Chapter 459 or other solid waste statute, rule, permit, or related order committed by a person with a population less than 5,000, as determined by the most recent national census.

(M) Any violation of the labeling requirements of ORS 459A.675 through 459A.685.

(N) Any violation of rigid pesticide container disposal requirements by a conditionally exempt generator of hazardous waste.

(O) Any violation of ORS 468B.025(1)(a) or (b) resulting from turbid discharges to waters of the state caused by non-residential uses of property disturbing less than one acre in size.

(P) Any violation of an oil and hazardous material spill and release statute, rule, or related order committed by a person not listed under another matrix.

(Q) Any violation of the Oregon Clean Fuels Program under OAR chapter 340, division 253 by a person registered as an importer of finished fuels unless the violation is otherwise classified in this rule.

(R) Any violation of the Oregon Greenhouse Gas Reporting Program under OAR Chapter 340, division 215 by a person with greenhouse gas emissions less than 5,000 metric tons per year.

~~(S) Any violation of the Landfill Gas Emissions rule under OAR Chapter 340, division 239 by a person that owns or operates a landfill with less than 200,000 tons waste in place.~~

(b) The base penalty values for the $3,000 penalty matrix are as follows:

(A) Class I:

(i) Major — $3,000;

(ii) Moderate — $1,500;

(iii) Minor — $750.

(B) Class II:

(i) Major — $1,500;

(ii) Moderate — $750;

(iii) Minor — $375.

(C) Class III: $250.

(5) $1,000 Penalty Matrix:

(a) The $1,000 penalty matrix applies to the following:

(A) Any violation of an open burning statute, rule, permit or related order committed by a residential owner-occupant at the residence, not listed under another penalty matrix.

(B) Any violation of visible emissions standards by operation of a vehicle.

(C) Any violation of an asbestos statute, rule, permit or related order committed by a residential owner-occupant.

(D) Any violation of an onsite sewage disposal statute, rule, permit or related order of OAR chapter 340, division 44 committed by a residential owner-occupant.

(E) Any violation of an UST statute, rule, permit or related order committed by a person who is the owner, operator or permittee of one UST facility.

(F) Any violation of an HOT statute, rule, permit or related order not listed under another penalty matrix.

(G) Any violation of OAR chapter 340, division 124 or ORS 465.505 by a dry cleaning owner or operator, dry store owner or operator, or supplier of perchloroethylene.

(H) Any violation of ORS Chapter 459 or other solid waste statute, rule or related order committed by a residential owner-occupant.

(I) Any violation of a statute, rule, permit or order relating to rigid plastic containers, except for violation of the labeling requirements under OAR 459A.675 through 459A.685.

(J) Any violation of a statute, rule or order relating to the opportunity to recycle.

(K) Any violation of OAR chapter 340, division 262 or other statute, rule or order relating to solid fuel burning devices, except a violation related to the sale of new or used solid fuel burning devices or the removal and destruction of used solid fuel burning devices.

(L) Any violation of an UIC system statute, rule, permit or related order by a residential owner-occupant, when the UIC disposes of stormwater, sewage or geothermal fluids.

(M) Any Violation of ORS 468B.025(1)(a) or (b) resulting from turbid discharges to waters of the state caused by residential use of property disturbing less than one acre in size.

(b) The base penalty values for the $1,000 penalty matrix are as follows:

(A) Class I:

(i) Major — $1,000;

(ii) Moderate — $500;

(iii) Minor — $250.

(B) Class II:

(i) Major — $500;

(ii) Moderate — $250;

(iii) Minor — $125.

(C) Class III: $100.

Statutory/Other Authority: ORS 468.020 & 468.090 - 468.140
Statutes/Other Implemented: ORS 459.995, 459A.655, 459A.660, 459A.685 & 468.035
History:
DEQ 14-2020, amend filed 05/07/2020, effective 05/07/2020
DEQ 199-2018, amend filed 11/16/2018, effective 01/01/2019
DEQ 197-2018, amend filed 11/16/2018, effective 11/16/2018
DEQ 13-2015, f. 12-10-15, cert. ef. 1-1-16
DEQ 1-2014, f. & cert. ef. 1-6-14
DEQ 2-2011, f. 3-10-11, cert. ef. 3-15-11
DEQ 6-2006, f. & cert. ef. 6-29-06
DEQ 4-2006, f. 3-29-06, cert. ef. 3-31-06
Renumbered from 340-012-0042, DEQ 4-2005, f. 5-13-05, cert. ef. 6-1-05
DEQ 6-2001, f. 6-18-01, cert. ef. 7-1-01
DEQ 19-1998, f. & cert. ef. 10-12-98
DEQ 9-1996, f. & cert. ef. 7-10-96
DEQ 4-1994, f. & cert. ef. 3-14-94
DEQ 21-1992, f. & cert. ef. 8-11-92
DEQ 33-1990, f. & cert. ef. 8-15-90
DEQ 15-1990, f. & cert. ef. 3-30-90
DEQ 4-1989, f. & cert. ef. 3-14-89

Key to changes:

~~Strikethrough: Text removed~~
Underline: New text added

Oregon Department of

Environmental Quality Table 1 –

OAR 340-216-8010

Activities and Sources

The following source categories must obtain a permit as required by OAR 340-216-0020 Applicability and Jurisdiction.

Part A: Basic ACDP

1. Autobody repair or painting shops painting more than 25 automobiles in a year and that are located inside the Portland AQMA.

2. Concrete manufacturing including redi-mix and CTB, both stationary and portable, more than 5,000 but less than 25,000 cubic yards per year output.

3. Crematory incinerators with less than 20 tons/year material input.

4. Natural gas and propane fired boilers of 10 or more MMBTU/hour but less than 30 MMBTU/hour heat input constructed after June 9, 1989 that may use less than 10,000 gallons per year of #2 diesel oil as a backup fuel.

5. Prepared feeds for animals and fowl and associated grain elevators more than 1,000 tons/year but less than 10,000 tons per year throughput.

6. Rock, concrete or asphalt crushing, both stationary and portable, more than 5,000 tons/year but less than 25,000 tons/year crushed.

7. Surface coating operations whose actual or expected usage of coating materials is greater than 250 gallons per month but does not exceed 3,500 gallons per year, excluding sources that exclusively use non-VOC and non-HAP containing coatings, e.g., powder coating operations.

8. Sources subject to permitting under Part B of this table, number 85 if all of the following criteria are met:
   a. The source is not subject to any category listed on this table other than Part B number

85;

b. The source has requested an enforceable limit on their actual emissions, if the source were to operate uncontrolled, to below Part B number 85 of this table as applicable depending on the source's location through one or both of the following:
    i. A limit on hours of operation;
    ii. A limit on production;
c. Control devices are not required to be used or otherwise accounted for to maintain emissions levels compliant with 8.b above;
d. The source is not subject to and does not have any affected emissions units subject to a 40 C.F.R. part 60, part 61, or part 63 standard (NSPS or NESHAP);
e. The source is not subject to any specific industry or operation standard in OAR chapter 340 divisions 232, 234, or 236.
f. DEQ has determined that the source is not required to conduct source testing and source testing for emission factor verification will not be required.

~~Landfills with less than 0,000 tons of waste in place subject to requirements in OAR 340 division .~~

Part B: General, Simple or Standard ACDP

1. Aerospace or aerospace parts manufacturing subject to RACT as regulated by OAR 340 division 232.

2. Aluminum, copper, and other nonferrous foundries subject to an area source NESHAP under OAR 340 division 244.

3. Aluminum production – primary.

4. Ammonia manufacturing.

5. Animal rendering and animal reduction facilities.

6. Asphalt blowing plants.

7. Asphalt felts or coating manufacturing.

8. Asphaltic concrete paving plants, both stationary and portable.

9. Bakeries, commercial over 10 tons of VOC emissions per year.

10. Battery separator manufacturing.

11. Lead-acid battery manufacturing and re-manufacturing.

12. Beet sugar manufacturing.

13. Boilers and other fuel burning equipment over 10 MMBTU/hour heat input, except exclusively Natural Gas and Propane fired units (with or without #2 diesel backup) under 30 MMBTU/hour heat input.

14. Building paper and buildingboard mills.

15. Calcium carbide manufacturing.

16. Can or drum coating subject to RACT as regulated by OAR 340 division 232.[2]

17. Cement manufacturing.

18. Cereal preparations and associated grain elevators 10,000 or more tons/year throughput.[1]

19. Charcoal manufacturing.

20. Chlorine and alkali manufacturing.

21. Chrome plating and anodizing subject to a NESHAP under OAR 340 division 244.

22. Clay ceramics manufacturing subject to an area source NESHAP under OAR 340 division 244.

23. Coffee roasting, roasting 30 or more green tons per year.

24. Concrete manufacturing including redi-mix and CTB, both stationary and portable, 25,000 or more cubic yards per year output.

25. Crematory incinerators 20 or more tons/year material input.

26. Degreasing operations, halogenated solvent cleanings subject to a NESHAP under OAR 340 division 244.

27. Electrical power generation from combustion, excluding units used exclusively as emergency generators and units less than 500 kW.

28. Commercial ethylene oxide sterilization, excluding facilities using less than 1 ton of ethylene oxide within all consecutive 12-month periods after December 6, 1996.

29. Ferroalloy production facilities subject to an area source NESHAP under OAR 340 division 244.

30. Flatwood coating regulated by OAR division 232.[2]

31. Flexographic or rotogravure printing subject to RACT under OAR 340 division 232.[2]

32. Flour, blended and/or prepared and associated grain elevators 10,000 or more tons/year throughput.[1]

33. Galvanizing and pipe coating, except galvanizing operations that use less than 100 tons of zinc/year.

34. Bulk gasoline plants, bulk gasoline terminals, and pipeline facilities.

35. Gasoline dispensing facilities, excluding gasoline dispensing facilities with monthly throughput of less than 10,000 gallons of gasoline per month.

36. Glass and glass container manufacturing subject to a NSPS under OAR 340 division 238 or a NESHAP under OAR 340 division 244.

37. Grain elevators used for intermediate storage 10,000 or more tons/year throughput.[1]

38. Reserved.

39. Gray iron and steel foundries, malleable iron foundries, steel investment foundries, steel foundries 100 or more tons/year metal charged, not elsewhere identified.

40. Gypsum products manufacturing.

41. Hardboard manufacturing, including fiberboard.

42. Hospital sterilization operations subject to an area source NESHAP under OAR 340 division 244.

43. Incinerators with two or more tons per day capacity.

44. Lime manufacturing.

45. Liquid storage tanks subject to RACT under OAR 340 division 232.[2]

46. Magnetic tape manufacturing.

47. Manufactured home, mobile home and recreational vehicle manufacturing.

48. Marine vessel petroleum loading and unloading subject to RACT under OAR 340 division 232.

49. Metal fabrication and finishing operations subject to an area source NESHAP under OAR 340 division 244, excluding facilities that meet all the following:
    a. Do not perform any of the operations listed in OAR 340-216-0060(2)(b)(W)(i) through (iii);
    b. Do not perform shielded metal arc welding (SMAW) using metal fabrication and finishing hazardous air pollutant (MFHAP) containing wire or rod; and
    c. Use less than 100 pounds of MFHAP containing welding wire and rod per year.

50. Millwork manufacturing, including kitchen cabinets and structural wood members, 25,000 or more board feet/maximum 8 hour input.

51. Molded container manufacturing.

52. Motor coach manufacturing.

53. Motor vehicle and mobile equipment surface coating operations subject to an area source NESHAP under OAR 340 division 244, excluding motor vehicle surface coating operations painting less than 10 vehicles per year or using less than 20 gallons of coating and 20 gallons of methylene chloride containing paint stripper per year, mobile equipment surface coating operations using less than 20 gallons of coating and 20 gallons of methylene chloride containing paint stripper per year, and motor vehicle surface coating operations registered pursuant to OAR 340-210-0100(2).

54. Natural gas and oil production and processing and associated fuel burning equipment.

55. Nitric acid manufacturing.

56. Nonferrous metal foundries 100 or more tons/year of metal charged.

57. Organic or inorganic chemical manufacturing and distribution with ½ or more tons per year emissions of any one criteria pollutant, sources in this category with less than ½ ton/year of each criteria pollutant are not required to have an ACDP.

58. Paint and allied products manufacturing subject to an area source NESHAP under OAR 340 division 244.

59. Paint stripping and miscellaneous surface coating operations subject to an area source NESHAP under OAR 340 division 244, excluding paint stripping and miscellaneous surface coating operations using less than 20 gallons of coating and 20 gallons of methylene chloride containing paint stripper per year.

60. Paper or other substrate coating subject to RACT under OAR 340 division 232.[2]

61. Particleboard manufacturing, including strandboard, flakeboard, and waferboard.

62. Perchloroethylene dry cleaning operations subject to an area source NESHAP under OAR 340 division 244, excluding perchloroethylene dry cleaning operations registered pursuant to OAR 340-210-0100(2).

63. Pesticide manufacturing 5,000 or more tons/year annual production.

64. Petroleum refining and re-refining of lubricating oils and greases including asphalt production by distillation and the reprocessing of oils and/or solvents for fuels.

65. Plating and polishing operations subject to an area source NESHAP under OAR 340 division 244.

66. Plywood manufacturing and/or veneer drying.

67. Prepared feeds manufacturing for animals and fowl and associated grain elevators 10,000 or more tons per year throughput.

68. Primary smelting and/or refining of ferrous and non-ferrous metals.

69. Pulp, paper and paperboard mills.

70. Rock, concrete or asphalt crushing, both stationary and portable, 25,000 or more tons/year crushed.

71. Sawmills and/or planing mills 25,000 or more board feet/maximum 8 hour finished product.

72. Secondary nonferrous metals processing subject to an Area Source NESHAP under OAR 340 division 244.

73. Secondary smelting and/or refining of ferrous and nonferrous metals.

74. Seed cleaning and associated grain elevators 5,000 or more tons/year throughput.[1]

75. Sewage treatment facilities employing internal combustion engines for digester gasses.

76. Soil remediation facilities, both stationary and portable.

77. Steel works, rolling and finishing mills.

78. Surface coating in manufacturing subject to RACT under OAR 340 division 232.[2]

79. Surface coating operations with actual emissions of VOCs before add on controls of 10 or more tons/year.

80. Synthetic resin manufacturing.

81. Tire manufacturing.

82. Wood furniture and fixtures 25,000 or more board feet/maximum 8 hour input.

83. Wood preserving (excluding waterborne).

84. All other sources, both stationary and portable, not listed herein that DEQ determines an air quality concern exists or one which would emit significant malodorous emissions.

85. All other sources, both stationary and portable, not listed herein which would have actual emissions, if the source were to operate uncontrolled, of 5 or more tons per year of direct PM2.5 or PM10 if located in a PM2.5 or PM10 nonattainment or maintenance area, or 10 or more tons per year of any single criteria pollutant if located in any part of the state.[4]

86. Chemical manufacturing facilities that do not transfer liquids containing organic HAP listed in Table 1 of 40 CFR part 63 subpart VVVVVV to tank trucks or railcars and are not subject to emission limits in Table 2, 3, 4, 5, 6, or 8 of 40 CFR part 63 subpart VVVVVV.

87. Stationary internal combustion engines if:
    a. For emergency generators and firewater pumps, the aggregate engine horsepower rating is greater than 30,000 horsepower; or
    b. For any individual non-emergency or non-fire pump engine, the engine is subject to 40 CFR part 63, subpart ZZZZ and is rated at 500 horsepower or more, excluding two stroke lean burn engines, engines burning exclusively landfill or digester gas, and four stroke engines located in remote areas; or
    c. For any individual non-emergency engine, the engine is subject to 40 CFR part 60, subpart IIII and:
    i. The engine has a displacement of 30 liters or more per cylinder; or
    ii. The engine has a displacement of less than 30 liters per cylinder and is rated at 500 horsepower or more and the engine and control device are either not certified by the manufacturer to meet the NSPS or not operated and maintained according to the manufacturer's emission-related instructions; or
    d. For any individual non-emergency engine, the engine is subject to 40 CFR part 60, subpart JJJJ and is rated at 500 horsepower or more and the engine and control device are either not certified by the manufacturer to meet the NSPS or not operated and maintained according to the manufacturer's emission-related instructions.

88. All sources subject to RACT under OAR 340 division 232, BACT or LAER under OAR 340 division 224, a NESHAP under OAR 340 division 244, a NSPS under OAR 340 division 238, or State MACT under OAR 340-244-0200(2), except sources:
    a. Exempted in any of the categories above;
    b. For which a Basic ACDP is available; or
    c. Registered pursuant to OAR 340-210-0100(2).

89. Pathological waste incinerators.

90. Landfills with more than 200,000 tons of waste in place and calculated methane generation rate is less than 664 metric tons per year which are subject to the requirements in OAR 340 division 239.

[1] Applies only to Special Control Areas
[2] Portland AQMA, Medford-Ashland AQMA or Salem-Keizer in the SKATS only
[3] "monthly throughput" means the total volume of gasoline that is loaded into, or dispensed from, all gasoline storage tanks at the gasoline dispensing facility during a month. Monthly throughput is calculated by summing the volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at the gasoline dispensing facility during the month, plus the total volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at the gasoline dispensing facility during the previous 11 months, and then dividing that sum by 12
[4] A source subject to permitting from this category may be able to obtain a Basic ACDP under Part A number 8 of this table. For sources that meet the criteria of Part A number 8 of this table, the enforceable production or hours limitation in an issued ACDP may be used to demonstrate a permit is not required by Part B number 85 of this table irrespective of the term 'uncontrolled'.

Part C: Standard ACDP

1. Incinerators for PCBs, other hazardous wastes, or both.

2. All sources that DEQ determines have emissions that constitute a nuisance.

3. All sources electing to maintain the source's netting basis.

4. All sources that request a PSEL equal to or greater than the SER for a regulated pollutant.

5. All sources having the potential to emit 100 tons or more of any regulated pollutant, except GHG, in a year.

6. All sources having the potential to emit 10 tons or more of a single hazardous air pollutant in a year.

7. All sources having the potential to emit 25 tons or more of all hazardous air pollutants combined in a year.

8. Landfills with more than 200,000 tons of waste in place and calculated methane generation rate is greater than or equal to 664 metric tons per year which are subject to the requirements in OAR 340 division 239.

NOTE: See history of these tables under OAR 340-216-0020