

Initial Reporting Guidance

Chapter 173-408 WAC, Landfill Methane Emissions



Overview

[Chapter 173-408 WAC – Landfill Methane Emissions](#)¹ was adopted on May 13, 2024. The rule went into effect on June 13, 2024.

This document provides guidance on how to comply with the initial reporting requirements. Ecology anticipates issuing further guidance as more questions on how to comply with the rule's requirements are received.

Initial Waste in Place Reporting

Q: Who must submit an initial waste in place report?

A: Any owner or operator of a municipal solid waste (MSW) landfill that received solid waste after January 1, 1992, as required by [WAC 173-408-060\(1\)](#)² and [WAC 173-408-170\(1\)](#)³.

Q: My landfill has closed in accordance with the requirements set forth in Chapter 173-304 WAC: Do I still need to submit an initial waste in place report?

A: Yes. All MSW landfills that have received solid waste after January 1, 1992, must submit an initial waste in place report.

Q: When is the initial waste in place report due?

A: By September 11, 2024

Q: What do I need to submit?

A: The report must contain the following information:

- Municipal solid waste landfill name
- Owner and/or operator
- Address

¹ <https://ecology.wa.gov/Regulations-Permits/Laws-rules-rulemaking/Rulemaking/WAC-173-408>

² <https://app.leg.wa.gov/WAC/default.aspx?cite=173-408-060>

³ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-408-170>

- Facility/site ID (FS ID) number
- The estimated waste in place, in tons, as of December 31st, 2023.

Q: What format should I submit the waste in place report in?

A: Electronically, and as a pdf, using this [template](#).

Q: How do I find my Facility/site ID (FS ID)?

A: Your FS ID can be found by searching the Facility/Site database on Ecology’s website: [Facility/Site search \(wa.gov\)](#)⁴

Q: How do I figure out how much waste in place is at my landfill?

A: You can get an estimate of your waste in place by converting volume to weight/mass:

If you do not have records of total weight of waste in place, Ecology can accept an estimated weight calculated by converting estimated waste volume to weight. Ecology's default conversion factor is 1,300 pounds per cubic yard of waste.

Example:

1 cubic yard (cu yd) of compacted waste = 1,300 pounds (lbs.), and 1 ton = 2,000 pounds

A MSW landfill with 1,000,000 cubic yards of waste will therefore have:

1,000,000 cu yd x 1,300 lbs. = 1,300,000,000 lbs. of waste

$$\frac{1,300,000,000 \text{ (lbs.)}}{2,000 \text{ (lbs.)}} = \mathbf{650,000 \text{ tons of waste in place}}$$

If you use a site-specific conversion factor at your landfill based on weight records and changes in airspace volume, you may use that conversion factor. However, you must note in your reporting that you are using a site-specific conversion factor, clearly state what the conversion factor is, and provide documentation to explain how you derived it.

Initial Heat Input Capacity Reporting

Q: Do I need to submit an initial heat input capacity report?

A: Active and inactive MSW landfills that report waste in place of 450,000 tons or greater, and closed MSW landfills that report waste in place of 750,000 tons or greater must also submit an

⁴ <https://apps.ecology.wa.gov/facilitysite/>

initial heat input capacity report, as required by [WAC 173-408-070\(2\)](#)⁵ and [WAC 173-408-170\(2\)](#)⁶.

Q: My landfill has closed in accordance with the requirements set forth in Chapter 173-304 WAC: Do I still need to submit an initial heat input capacity report?

A: MSW Landfills that closed in accordance with the requirements set forth in Chapter 173-304 WAC are considered an “inactive municipal solid waste landfill” under the rule, as defined in [WAC 173-408-020](#)⁷. Inactive MSW landfills are subject to all requirements applicable to active MSW landfills unless and until Ecology or the local authority determines the landfill is exempt in accordance with [WAC 173-408-070\(4\)\(b\)\(ii\)](#)⁸, or the owner or operator submits a closure notification in accordance with [WAC 173-408-170\(8\)](#)⁹.

Inactive MSW landfill owners or operators can reach out to either catherine.lucke@ecy.wa.gov or bill.flagg@ecy.wa.gov for more information on these requirements.

Q: When is the initial heat input capacity report due?

A: By September 11, 2024

Q: When should I submit my initial heat input capacity report?

A: After you have submitted your initial waste in place report, which will determine whether you need to also submit an initial heat input capacity report.

Q: How do I calculate my heat input capacity?

A: There are three different ways to calculate heat input capacity, based on the type of landfill that you own or operate:

- 1.) Municipal solid waste landfills without carbon adsorption or passive venting systems must use the methodology provided in [WAC 173-408-980 \(Appendix I\)](#)¹⁰.
- 2.) Municipal solid waste landfills with carbon adsorption systems must calculate landfill gas heat input capacity 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
 - The methane concentration (percent by volume) using a hydrocarbon detector meeting the requirements of [WAC 173-408-120\(1\)](#)¹¹. The total landfill gas flow rate must be multiplied

⁵ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-408-070>

⁶ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-408-170>

⁷ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-408-020>

⁸ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-408-070>

⁹ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-408-170>

¹⁰ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-408-980>

¹¹ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-408-120>

by the methane concentration and then multiplied by the gross heating value (GHV) of methane of 1,012 Btu/scf to determine the landfill gas heat input capacity.

- 3.) Municipal solid waste landfills with passive venting systems must calculate landfill gas heat input capacity using both of the following, and report the higher of those determined values:
- The methodology provided in WAC 173-408-980 (Appendix I); and the owner or operator must measure:
 - The actual landfill gas flow rates (in units of scfm), using a flow meter or other flow measuring device such as a standard pitot tube; and
 - The methane concentration (percent by volume), using a hydrocarbon detector, 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 and then multiplied by the GHV of methane of 1,012 Btu/scf to determine the landfill gas heat input capacity.

Q: Can I use any hydrocarbon detector to aid in calculating the heat input capacity?

A: No, the hydrocarbon detector used must meet the requirements in WAC 173-408-120(1).

Q: I do not see ANDOC values defined in the calculation in Appendix I, what should I use?

A: Ecology anticipates issuing further guidance on calculating heat input capacity for MSW landfills without carbon adsorption or passive venting systems.

For questions on the heat input capacity calculation, please reach out to Catherine Lucke at catherine.lucke@ecy.wa.gov (564-669-1601), or Bill Flagg at bill.flagg@ecy.wa.gov (564-669-1385).

Publication information

This report is available on the Department of Ecology's website at <https://apps.ecology.wa.gov/ecy/publications/SummaryPages/2402020.html>

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¹² <https://ecology.wa.gov/about-us/contact-us>