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Title 40

PART 449 - AIRPORT DEICING POINT SOURCE CATEGORY

Authority: 33 U.S.C. 1311, 1314, 1316, 1318, 1342, 1361 and 1370.

Source: 77 FR 29203, May 16, 2012, unless otherwise noted.

Subpart A - Airport Deicing Category

§ 449.1 Applicability.

This part applies to discharges of pollutants from deicing operations at Primary Airports.

§ 449.2 General definitions.

The following definitions apply to this part:

Aircraft deicing fluid (ADF) means a fluid (other than hot water) applied to aircraft to remove or prevent any accumulation of snow or ice on the aircraft. This includes deicing and anti-icing fluids.

Airfield pavement means all paved surfaces on the airside of an airport.

Airside means the part of an airport directly involved in the arrival and departure of aircraft, including runways, taxiways, aprons, and ramps.

Annual non-propeller aircraft departures means the average number of commercial turbine-engine aircraft that are propelled by jet, i.e., turbojet or turbofan, that take off from an airport on an annual basis, as tabulated by the Federal Aviation Administration (FAA).

Available ADF means 75 percent of the normalized Type I aircraft deicing fluid and 10 percent of the normalized Type IV aircraft deicing fluid, excluding aircraft deicing fluids used for defrosting or deicing for safe taxiing.

Centralized deicing pad means a facility on an airfield designed for aircraft deicing operations, typically constructed with a drainage system separate from the airport main storm drain system.

COD means Chemical Oxygen Demand.

Collection requirement means the requirement in § 449.11 for the permittee to collect available ADF.

Defrosting means the removal of frost contamination from an aircraft when there has been no active precipitation.

Deicing mean procedures and practices to remove or prevent any accumulation of snow or ice on:

- (1) An aircraft; or
- (2) Airfield pavement.

Deicing for safe taxiing means the application of ADF necessary to remove snow or ice to prevent damage to a taxiing aircraft.

FAA Advisory Circular means a guidance document issued by the FAA on methods, procedures, or facility design.

Heating degree day means the number of degrees per day the daily average temperature is below 65 degrees Fahrenheit. The daily average temperature is the mean of the maximum and minimum temperature for a 24-hour period. The annual heating degree day value is derived by summing the daily heating degree days over a calendar year period.

Normalized Type I or Type IV aircraft deicing fluid means ADF less any water added by the manufacturer or customer before ADF application.

Primary Airport means an airport defined at 49 U.S.C. 47102 (15).

§ 449.10 Effluent limitations representing the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source with at least 1,000 annual non-propeller aircraft departures must comply with the following requirements representing the degree of effluent reduction attainable by the application of BAT. The BAT requirements for point sources with less than 1,000 annual non-propeller aircraft departures are beyond the scope of this regulation and shall be determined by the permit authority on a site-specific basis.

- (a) **Airfield pavement deicing.** There shall be no discharge of airfield pavement deicers containing urea. To comply with this limitation, any existing point source must certify annually that it does not use airfield deicing products that contain urea or alternatively, airfield pavement discharges at every discharge point must achieve the numeric limitations for ammonia in Table I, prior to any dilution or commingling with any non-deicing discharge.

Table I - BAT Limitations

Wastestream	Pollutant	Daily maximum
Airfield Pavement Deicing	Ammonia as Nitrogen	14.7 mg/L.

- (b) [Reserved]

§ 449.11 New source performance standards (NSPS).

New sources with at least 1,000 annual non-propeller aircraft departures must achieve the following new source performance standards. The new source performance standards for point sources with less than 1,000 annual non-propeller aircraft departures are beyond the scope of this part and shall be determined by the permit authority on a site-specific basis.

- (a) **Aircraft deicing.** Except for new airports located in Alaska, all new sources located in an area that, at the time of construction, had more than 3,000 annual heating degree days, and are estimated, within five years of commencing operations, to exceed 10,000 annual departures, must comply with the following requirements upon the date the facility exceeds 10,000 annual departures. New source performance standards that apply prior to that date, new source performance standards for sources that project they will not exceed 10,000 annual departures within five years of commencing operations, and new performance standards for airports in Alaska, are beyond the scope of this regulation and shall be determined by the permit authority on a site-specific basis.
 - (1) **Collection requirement.** The new source must collect at least 60 percent of available ADF.
 - (2) **Numerical effluent limitation.** The new source must achieve the performance standards in Table II for available ADF collected pursuant to paragraph (a)(1) of this section. The limitation must be met at the location where the effluent leaves the onsite treatment system utilized for meeting these requirements and before commingling with any non-

deicing discharge.

Table II - NSPS

Wastestream	Pollutant	Daily maximum	Weekly average
Aircraft Deicing	COD	271 mg/L	154 mg/L.

- (b) **Airfield pavement deicing.** There shall be no discharge of airfield pavement deicers containing urea. To comply with this limitation, any new source must certify annually that it does not use airfield deicing products that contain urea or alternatively, airfield pavement discharges at every discharge point must achieve the numeric limitations for ammonia in Table III, prior to any dilution or commingling with any non-deicing discharge.

Table III - NSPS

Wastestream	Pollutant	Daily maximum
Airfield Pavement Deicing	Ammonia as Nitrogen	14.7 mg/L.

§ 449.20 Monitoring, reporting and recordkeeping requirements.

- (a) **Demonstrating compliance with the ADF collection requirement for dischargers subject to NSPS collection requirements in § 449.11.** Except as provided in 40 CFR 125.30 through 125.32, an individual permittee shall select a procedure under either paragraphs (a)(1), (2), or (3) of this section in its permit application as the procedure for the permittee to demonstrate compliance with the applicable collection, reporting and recordkeeping requirements of this Part. A procedure selected by the permittee under paragraph (a)(2) of this section may be included in the permit only with the Director's approval, as described in paragraph (a)(2) of this section. For general permits, use of alternative methods for determining compliance with the ADF collection requirement for dischargers subject to NSPS collection requirements in this part will be at the discretion of the Director.
- (1) The permittee shall maintain records to demonstrate, and certify annually, that it is operating and maintaining one or more centralized deicing pads. This technology shall be operated and maintained according to the technical specifications set forth in paragraphs (a)(1)(i) through (iv) of this section. For both individual and general permits, these technical specifications shall be expressly set forth as requirements in the permit. The permittee's demonstration and valid certification are sufficient to meet the applicable NSPS collection requirement without the permittee having to determine the numeric percentage of available ADF collected.
 - (i) Each centralized deicing pad shall be sized and sited in accordance with all applicable FAA advisory circulars.
 - (ii) Drainage valves associated with the centralized deicing pad shall be activated before deicing activities commence, to collect available ADF.
 - (iii) The centralized deicing pad and associated collection equipment shall be installed and maintained per any applicable manufacturers' instructions, and shall be inspected, at a minimum, at the beginning of each deicing season to ensure that the pad and associated equipment are in working condition.
 - (iv) All aircraft deicing shall take place on a centralized deicing pad, with the exception of defrosting and deicing for safe taxiing.
 - (2) **Alternative technology or specifications.**
 - (i) An individual permit (or a general permit at the discretion of the Director) may allow one of the following alternative procedures for demonstrating compliance with its collection requirement, instead of the procedure in paragraph (a)(1) of this section. The permittee must submit all information and documentation necessary to support this request. An individual permittee may request this alternative procedure in its initial permit application or permit renewal application. During the term of an individual permit, the permittee may also request this alternative procedure as a permit modification, subject to the requirements and procedures at 40 CFR 122.62 and 40 CFR part 124. If the Director determines, in his or her discretion, that the requested alternative procedure will achieve the collection requirement in the permit, the Director shall approve the request:

- (A) The use of a different ADF collection technology from the centralized deicing pad technology specified in paragraph (a)(1) of this section; or
 - (B) The use of the same ADF collection technology, but with different specifications for operation and/or maintenance.
- (ii) **Pollution prevention credit.** A permittee may apply for, and obtain, full or partial credit towards compliance with the available ADF collection requirement. To obtain credit the permittee must demonstrate to the Director's satisfaction that it employs a pollution prevention technique that reduces the volume of, or quantity of, pollutants in, available ADF. The credit shall be equivalent to the demonstrated reduction, as determined by the Director.
 - (iii) The Director shall set forth technical specifications for proper operation and maintenance of the chosen collection technology, as appropriate, and compliance with these technical specifications must be required by the permit. The permit shall also require the permittee to maintain records sufficient to demonstrate compliance with these requirements. This demonstration constitutes compliance by the permittee with the percent capture requirement without the permittee having to determine the numeric percentage of ADF that it has collected. Before the Director may approve an alternate technology under this subsection, the permittee must demonstrate to the Director's satisfaction that the alternate technology will achieve the applicable percent capture requirement.
- (3) The permittee shall maintain records, by means deemed acceptable by the Director, and report at a frequency determined by the Director, on the volume of ADF sprayed and the amount of available ADF collected in order to determine the compliance with the collection requirement.
- (b) **Monitoring requirements -**
 - (1) **COD limitation.** Permittees subject to the ADF collection and discharge requirements specified in § 449.11 must conduct effluent monitoring to demonstrate compliance with the COD limitation for all ADF that is collected. Compliance must be demonstrated at the location where the effluent leaves the on-site treatment system utilized for meeting these requirements and before commingling with any non-deicing discharge. Effluent samples must be collected following the protocol in Appendix A to this part.
 - (2) **Ammonia limitation.** If a permittee chooses to comply with the compliance alternative specified in § 449.10(a) or § 449.11(b), the permittee must conduct effluent monitoring at all locations where pavement deicing with a product that contains urea is occurring, prior to any dilution or commingling with any non-deicing discharge.
 - (c) **Recordkeeping.**
 - (1) The permit shall provide that the permittee must maintain on site, during the term of the permit, up to five years, records documenting compliance with paragraphs (a) through (b) of this section. These records include, but are not limited to, documentation of wastewater samples collected and analyzed, certifications, and equipment maintenance schedules and agreements.
 - (2) At the Director's discretion, a requirement may be included in the permit for the permittee to collect, and maintain on site during the term of the permit, up to five (5) years of data on the annual volume of ADF used.

Subpart B [Reserved]

Appendix A to Part 449 - Sampling Protocol for Soluble COD

This sampling protocol applies only to samples collected for use in measurement of COD when demonstrating compliance with the regulations set forth in this part. Collect a representative sample of the effluent from the airport deicing treatment system, based on the discharge permit requirements (e.g., a grab sample or a composite sample). Because only the COD sample is filtered, do not use in-line filters if collecting a sample with a compositing device.

A. Grab Samples

1. Cap the container and shake the grab sample vigorously to mix it. Remove the plunger from a 10-milliliter (mL) or larger Luer-lock plastic syringe equipped with an Acrodisc Luer-lock filter containing a 1.5-µm glass fiber filter (Whatman 934-AH, or equivalent), and fill the syringe body with sample.
2. Replace the plunger and filter the sample into a clean 50-mL screw-cap glass, plastic, or fluoropolymer bottle.

Note:

If testing is being done in the field, or with a test kit product (e.g., Hach Method 8000), the filtrate may be collected in the test kit vial or container.

3. Additional 10-mL volumes of sample may be filtered and the filtrate added to the same sample bottle. This additional volume may be used to repeat sample analyses or to prepare Quality Control (QC) samples, as needed.
4. Unless the filtered sample will be analyzed within 15 minutes, preserve the filtered sample with H₂SO₄ to pH <2. Cap the bottle and label with the sample number. Place in a cooler on ice prior to shipping.
5. Once at the analytical laboratory, the sample must be stored at ≤6 degrees Celsius and analyzed within 28 days of collection (see the requirements for COD in Table II at 40 CFR part 136).
6. Analyze the sample using a method approved for COD in Table IB at 40 CFR part 136.

Note:

Because this procedure is specific to this point source category, it does not appear by name in 40 CFR part 136.

7. Report the sample results as Soluble COD in units of milligrams per liter (mg/L). There is no Chemical Abstracts Service (CAS) Registry Number for soluble COD.

B. Composite Samples

1. If the sample will be analyzed in a fixed laboratory (as opposed to field testing), transfer at least 50 mL of well-mixed sample from the compositing device into a clean 50-mL screw-cap glass, plastic, or fluoropolymer bottle. Preserve the sample with H₂SO₄ to pH <2. Cap the bottle and label with the sample number. Place in a cooler on ice prior to shipping.
2. Once at the analytical laboratory, the sample must be stored at ≤6 degrees Celsius and analyzed within 28 days of collection (see the requirements for COD in Table II at 40 CFR part 136).
3. Prior to analysis, remove the sample from cold storage and allow it to warm to room temperature. Shake the sample vigorously to mix it.
4. Remove the plunger from a 10-mL or larger Luer-lock plastic syringe equipped with an Acrodisc Luer-lock filter containing a 1.5-µm glass fiber filter (Whatman 934-AH, or equivalent), and fill the syringe body with sample.
5. Replace the plunger and filter the sample into a clean COD vial or other suitable container.
6. Additional 10-mL volumes of sample may be filtered and the filtrate added to separate containers, as needed, to provide samples for repeat analyses or to prepare QC samples.
7. Analyze the sample using a method approved for COD in Table 1B at 40 CFR part 136.

Note:

Because this procedure is specific to this point source category, it does not appear by name in 40 CFR part 136.

8. Report the sample results as Soluble COD in units of mg/L. There is no CAS Registry Number for soluble COD.