

AIRPORT DEICER RUNOFF MONITORING

In 2012 US EPA established guidelines for airport deicing effluent (40 CFR Part 449). The guidelines require that large airports with more than 10 thousand flights per year located in cold climates must collect at least 60 percent of the deicer runoff. Airports that discharge to U.S. waters must also meet discharge permit requirements for chemical oxygen demand.

INDUSTRY OVERVIEW

Airports in cold climates use large amounts of deicer (typically propylene- or ethylene-glycol) on planes and airfields prior to take-off. A large airport will use millions of gallons of deicer during colder months. Since most deicers degrade easily, the runoff depletes the available dissolved oxygen as it oxidizes, which can place a high demand on down-stream treatment plants and surface waters.

The varying quality of the runoff presents a challenge to online analysis. Acceptable values for surface discharge are very low, while weather events may cause highly contaminated concentrations of up to 50,000 mg/L. Therefore, an ideal monitoring system needs to be flexible, fast and accurate, allowing compliant streams to run off the airfield while re-directing contaminated flows to storage basins for treatment or recycling.

Thickening agents further complicate the analysis. Thickeners are added to help deicer adhere to a plane's surface. This adhesion causes memory and carry-over effects with some online monitoring systems and residue from previous measurements can falsify following measurements.

Adhesion is also a problem for thin tubing and filters.

LAR's QuickTOCAirport is the most reliable measurement system available for airport applications. Due to its innovative injection and oxidation technique the analyzer is optimally suited for the online monitoring of airfield runoff. With no sample pre-treatment or dilution the analyzer can handle high salt concentrations and is free from any memory effects.

LAR, the combustion leader in TOC analysis, provides maximum reliability and availability, to protect the environment and help assure safe airport winter operation.



LAR US Installations in Airport Deicer Runoff applications.

- KY Blue Grass Airport
- OH Columbus Airport
- GA Hartsfield Atlanta Int'l Airport
- WI Dane County Airport
- NY Buffalo BNIA-NFTA Wetlands
- MO Lambert Airport, St. Louis
- RI T.F. Green Airport
- OH Toledo Airport

