CLEVELAND HOPKINS INTERNATIONAL AIRPORT STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

Prepared for: Cleveland Airport System
Environmental Services
5300 Riverside Drive
Cleveland, OH 44181-0009

Project No.: 6934
Date: September 30, 2023

Prepared by:

EnviroScience
Excellence In Any Environment
5070 Stow Rd.
Stow, OH 44224
800-940-4025
www.EnviroScienceInc.com

Stormwater Pollution Prevention Plan (SWPPP)

City of Cleveland

Department of Port Control

Cleveland Hopkins International Airport

SWPPP Preparation Date: 1/12/2018

Revised: 09/30/2023

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ATTACHMENTS

LIST OF APPENDICES

SECTION 1: FACILITY DESCRIPTION AND CONTACT INFORMATION

1.1. FACILITY INFORMATION

Table 1.1 Facility Information

Facility Information

Name of Facility: Cleveland Hopkins International Airport

Street: 5300 Riverside Drive

City: Cleveland State: Ohio ZIP Code: 44135

County: Cuyahoga

Ohio EPA Facility Permit Number: 3II00179*FD

Latitude/Longitude (Use one of three possible formats, and specify method)

Latitude: Longitude:

1. 41 º 24 ' 44.51" N (degrees, minutes, seconds) 1.81 º 51 ' 36.26" W (degrees, minutes, seconds)

Method for determining latitude/longitude (check one):

☐ USGS topographic map (specify scale:_____) ☐ Web site ☐ GPS

☒ Other (please specify): Google Earth

Estimated area of industrial activity at site exposed to stormwater: 1959 acres

Discharge Information

Does this facility discharge stormwater into an MS4? ☒ Yes ☐ No

If yes, name of MS4 operator: City of Brookpark and City of Cleveland

Name(s) of water(s) that receive stormwater from your facility Abram Creek, Silver Creek, and Rocky River

Are any of your stormwater discharges subject to effluent guidelines? ☒ Yes ☐ No

If Yes, which guidelines apply? 40 CFR 449

Identify your applicable sector and subsector: Sector S Air Transportation Facilities

1.2. CONTACT INFORMATION/RESPONSIBLE PARTIES

Facility Owner:

Name: City of Cleveland Department of Port Control
Address: 5300 Riverside Drive
City, State, Zip Code: Cleveland, OH 44135
Telephone Number: 216-265-6022

Environmental Contact:

Name: Kim McGreal, Environmental Services Manager
Address: 5300 Riverside Drive, P.O. Box 81009
City, State, Zip Code: Cleveland, Ohio 44135
Telephone Number: 216-265-6615
Email Address: Kmcgreal@clevelandairport.com

SWPPP Contacts:

Name: Beau Williams
Address: 5300 Riverside Drive, P.O. Box 81009
City, State, Zip Code: Cleveland, Ohio 44181
Telephone Number: 216-265-6009
Email Address: BWilliams@clevelandairport.com

Name: Mike Reilly
Address: 5300 Riverside Drive, P.O. Box 81009
City, State, Zip Code: Cleveland, Ohio 44181
Telephone Number: 216-265-4901
Email Address: mreilly@clevelandairport.com

Name: Amy Wakefield
Address: 5300 Riverside Drive, P.O. Box 81009
City, State, Zip Code: Cleveland, Ohio 44181
Telephone Number: 216-265-1217
Email Address: awakefield@clevelandairport.com

1.3. STORMWATER POLLUTION PREVENTION TEAM

The Stormwater Pollution Prevention Team is responsible for developing, implementing, maintaining, and revising this SWPPP. The members of the team and their primary responsibilities are as follows.

Table 1.2 Pollution Prevention Team

Staff Name	Title	Individual Responsibilities
Kim McGreal	Airport Environmental & Sustainability Manager	SWPPP Implementation, Employee Training, Signature for Required Certifications
Beau Williams	Airport Environmental Compliance Coordinator	SWPPP Implementation and Record Keeping, Conducting Inspections, Corrective Actions, Employee Training, Submitting Reports
Mike Reilly	Airport Environmental Project Manager & Noise Officer	SWPPP Implementation and Record Keeping, Conducting Inspections, Corrective Actions, Employee Training, Submitting Reports

Amy Wakefield	Airport Environmental Technician	SWPPP Implementation and Record Keeping, Conducting Inspections, Corrective Actions, Employee Training, Submitting Reports

1.4. AIRPORT ACTIVITIES

Cleveland Hopkins International Airport (CLE) is the largest airport in Ohio, serving nearly 12 million passengers annually. CLE has three active runways (6R-24L, 6L-24R, and 10-28) and has service from eleven passenger airlines, eight of which are signatory, as well as service from two signatory cargo operators. Approximately 37 tenants lease facilities or conduct activities at CLE, with many having additional sub-tenants and business partners working on their behalf.

1.5. GENERAL LOCATION MAP

Figure 1.1 shows the general location of CLE.

Figure 1.1 Location Map of CLE

1.6. CLE SITE MAP

A site map of the airport is included in Attachment 1. The map includes:

- The stormwater conveyance system, including storm sewers and receiving streams
- Paved areas and buildings

- Surface water locations and flow paths
- Location of stormwater outfalls and facility drainage area
- Location of industrial activities exposed to precipitation including fueling stations, vehicle equipment maintenance, loading/unloading etc.
- Locations of where significant spills or leaks have occurred
- Locations and descriptions of all non-stormwater discharges
- Locations of all existing structural control measures

SECTION 2: POTENTIAL POLLUTANT SOURCES

2.1. POTENTIAL POLLUTANTS ASSOCIATED WITH INDUSTRIAL ACTIVITY

A list of industrial activities, potential pollutants, and control measures associated with each outfall is presented in Attachment 2.

2.2. SPILLS AND LEAKS

Spills are tracked electronically. Records are maintained at CLE, and historical records are available upon request. The Spill Log presented in Appendix A may be used to present this information in hard copy to summarize the electronic information. Table 2.1 and CLE Site Map identify where potential spills and leaks could contribute pollutants to stormwater, along with the location's associated outfalls and Table 2.2 summarizes notable spills that have occurred over the last three years.

Table 2.1 Potential Spills and Leaks

Location	Outfall(s)
Fuel Islands at Consolidated Maintenance Facility (CMF) and Snow Barn Vehicle Maintenance Building	012
Pump Stations	002, 003, 008, 010, 011, 012, 013
Mobile Fueling of Aircraft and related Ground Service Equipment at Concourses A, B, C, and D, West Cargo Ramp and tenant hangars	002, 003, 008, 010, 011, 012, 013
All Roadways for Mobile Equipment	All
Deicing Fluid Storage at Centralized Deicing Facility (summer months), West Cargo Ramp, Consolidated Maintenance Facility, and Snow Barn	003, 008, 011, 012, 013

Salt and Sodium Formate Storage and Transfer	002, 003, 008, 010, 011, 012, 013
Lavatory Services at all concourses and tenant hangars	002, 003, 008, 010, 011, 012, 013

Table 2.2 Spills for the Past Three Years

Spills, Leaks or Other Release Log					
Date	**Location of Spill**	**Type/Quantity of Material**	**Outfall Affected**	**What Happened?**	**Corrective Action to Prevent Reoccurrence**
03/02/2021	Menzie's Mtc Facility Ramp	Jet A- amount unknown	Outfall 003	Failed fuel valve	Training on proper reporting of spill and repair of equipment
03/22/2022	Gate E-24-A	~150 gallons Jet-A	Outfall 003	Fuel truck struck bollards	Training, fined Menzies
04/15/2022	AirBP	~200 gallons Jet-A	Outfall 002	Pipe Leak	Line repaired
12/31/2022	Concourse A, Gate A-8	~24 gallons Jet A	Outfall 002	Aircraft overfilled	Training on proper fueling procedures

2.3. NON-STORMWATER DISCHARGES DOCUMENTATION

All discharges covered by this permit are to be composed entirely of stormwater, except for the following non-stormwater discharges:

- Discharges from fire-fighting activities (not planned exercises)
- Fire hydrant flushing
- Potable water, including water line flushing
- Uncontaminated condensate from air conditioners, coolers/chillers, and other compressors, and from the outside storage of refrigerated gases or liquids
- Irrigation drainage
- Landscape watering, provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling
- Pavement wash waters where no detergents or hazardous cleaning products are used (e.g., bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols) and where the wash waters do not come into contact with oil and grease deposits, sources of pollutants associated with industrial activities, or any other toxic or hazardous materials, unless residues are first cleaned up using dry clean-up methods (e.g., applying absorbent materials and sweeping, using hydrophobic mops/rags) and appropriate control measures

have been implemented to minimize discharges of mobilized solids and other pollutants (e.g., filtration, detention, settlement)

- Routine external building washdown/power wash water that does not use detergents or hazardous cleaning products (e.g., those containing bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols)
- Uncontaminated ground water or spring water
- Foundation or footing drains where flows are not contaminated with process materials
- Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown or drains)

Outfalls are visually inspected regularly by members of CLE pollution prevention team in accordance with this SWPPP. Each outfall contains a base flow of groundwater that is visually clear with no odors. Routine inspections are documented in routine facility inspection forms (Appendix C).

2.4. SALT STORAGE

There is one indoor bulk salt (i.e., NaCl) storage facility in the Five Points Garage that is used for landside surfaces, one indoor bulk sodium formate (solid deicer) and sand storage building, two double-walled potassium acetate (liquid deicer) tanks at the Consolidated Maintenance Facility (CMF), and one double-walled potassium acetate tank at the Snow Barn that are used for airside surfaces. Super-sacks of sodium formate are stored inside Old VMB and transferred as needed to the CMF. Bags and containers of sodium formate are used for periodic pavement deicing around CLE concourses and tenant hangars during winter months. Application of conventional pavement deicers (i.e., NaCl, CaCl, etc.) is done on the landside pavement side of the Airport, not on the airside.

Appropriate measures to minimize exposure from adding to or removing materials from the pile include training employees on the importance of reducing tracking of materials, regular street sweeping, and shutting the bay doors when not in use.

2.5. SAMPLING DATA SUMMARY

CLE is regulated under the Individual NPDES Permit No. 3II00179*FD, which is presented in Attachment 3. All stormwater outfalls are monitored monthly with eDMR reports submitted to Ohio EPA. Electronic and paper copies of the eDMRs are maintained at CLE and are available upon request.

SECTION 3: STORMWATER CONTROL MEASURES

3.1. MINIMIZE EXPOSURE

Minimizing exposure of potential pollutant sources to precipitation is an important control option and is a constant goal of CLE. Structural controls or practices in place at CLE include:

- Centralized Deicing Facility and West Cargo Ramp to contain anti-icing and deicing fluids.

- Double-walled or concrete secondary containment around most above-ground storage tanks (ASTs) and anti-icing and deicing material storage tanks.
- Storage of salt, deicing materials, herbicides, pesticides, and other possible pollutants within buildings.
- Construction of the Consolidated Maintenance Facility (CMF) additions to house snow removal and summer maintenance equipment and vehicle maintenance facilities.
- Landside and airfield pavement sweeping.
- Glycol valve inserts are installed in concourse and ramp catch basins.
- Spill Carts in close proximity to fueling and maintenance areas.
- Vehicle and equipment maintenance performed indoors only, as practicable.

3.2. GOOD HOUSEKEEPING

Department of Port Control (DPC) personnel and CLE tenants are responsible for the housekeeping of their areas. Areas with potential sources of stormwater pollutants are required to be clean and orderly, particularly maintenance, fueling, and waste storage areas. Good housekeeping is a practical, cost-effective way to maintain a clean and orderly facility to prevent potential pollution sources from contacting stormwater. Good housekeeping includes establishing protocols to reduce the possibility of mishandling materials or equipment and training employees in good housekeeping techniques. Common areas where good housekeeping practices should be followed include trash containers and adjacent areas, material storage areas, vehicle and equipment maintenance areas, deicer storage and loading areas, and loading docks. Good housekeeping practices at CLE include a schedule for regular pickup and disposal of garbage and waste materials, and routine inspections of drums, proper labeling of drums and containers, inspection of containers for leaks and structural condition, and immediate cleanup of spills or leaks. Practices also include containing and covering garbage, waste materials, and debris. Involving employees in routine monitoring of housekeeping practices has proven to be an effective means of ensuring the continued implementation of these measures. Un-stabilized areas are protected by silt fence and/or filter socks until either stabilized by vegetation or paved.

3.3. MAINTENANCE

The preventive maintenance program consists of the inspection of equipment, operational systems, and stormwater management devices to ensure that they are being regularly and adequately maintained, and to minimize the potential for failure. The preventive maintenance program is limited to equipment and operational systems where breakdowns or failures could result in discharges of contaminants to storm drains or surface waters. These items are to be inspected for proper operation, leaks, corrosion, or other deterioration or non-containment.

Preventive maintenance inspections will occur on a quarterly basis. The Stormwater Pollution Prevention Team is responsible for ensuring that preventive maintenance inspections are performed and that any problems uncovered during the inspections are promptly corrected. The Routine Inspection Form listed in Appendix C is to be completed during the preventive maintenance inspections. Information that will be recorded on the form includes the area or piece of equipment that requires any corrective action, the person who conducted the test or inspection, the inspection results, and any required corrective action. A record of routine inspections will be kept as part of this SWPPP.

Routine inspection of spill carts shall be performed on a monthly basis to ensure supplies are stocked and spent supplies are properly disposed of.

3.4. SPILL PREVENTION AND RESPONSE

To address spill prevention and potential contaminant runoff during precipitation events, CLE employs the following activities:

- Containers that could be susceptible to spillage or leakage are properly labeled (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides") to encourage proper handling and facilitate rapid response if spills or leaks occur.
- All above ground petroleum storage tanks with exposure to stormwater are double walled containers with interstitial monitoring.
- Bollards and curbs are used to protect fuel islands.
- Spill kits are kept on-site, located near areas where spills may occur or where a rapid response may be necessary.
- Training is provided to staff on procedures to quickly stop, contain, and remediate leaks, spills, and other releases.
- Appropriate facility personnel are notified when a leak, spill, or other release occurs.

In addition, CLE maintains a Spill Prevention, Control, and Countermeasures (SPCC) Plan. Section 5.0 and related Appendices B-F of this plan describe the secondary containment provisions, procedures for material storage and handling, and spill response and reporting.

Tenants subject to SPCC rules are responsible for the development of their site-specific plan if required.

3.5. EROSION AND SEDIMENT CONTROLS

Exposed soils that are not part of a regulated construction project are to be stabilized and vegetated as soon as possible. Reinforcement matting is to be used for slopes exceeding 3:1, and rutted areas are to be filled and compacted to eliminate concentrated flow channels and re-establish sheet flow. Any construction taking place at CLE involving one acre or more of disturbance will be governed under a specific construction SWPPP.

Flow velocity dissipation devices are located around the facility such as catch basin valve inserts, energy dissipators (e.g. protective rock, gabions), PCBMP orifices, etc.

A Stormwater Master Plan (SWMP) has been developed for CLE to address post construction best management plans required by the Ohio EPA Construction General Permit. The SWMP provides documentation of DPC's approach to stormwater management at CLE to comply with applicable regulations, in the context of existing facilities and the airport's Master Plan for development. This SWMP may be updated by DPC at any time to accommodate changes to airport development plans. The SWMP is presented in Attachment 4.

3.6. MANAGEMENT OF STORMWATER RUNOFF

Controls used to divert, infiltrate, reuse, contain, and reduce stormwater runoff consist of the following methods:

- Once the deicing season begins, aircraft deicing fluid (ADF) is collected at the Centralized

Deicing Facility (CDF) and diverted from Outfall 012. High concentration (35%-50%) ADF (propylene glycol) is collected for recycle and low concentration ADF (<10%) is collected for eventual discharge to the Northeast Ohio Regional Sewer District.

- During frost deicing, aircrafts are parked away from storm drains and if necessary, nearby catch basin inserts are closed to avoid deicers from reaching the stormwater drainage system. Glycol Recovery Vehicles (GRVs) are utilized to collect excess glycol from paved areas. Propylene glycol that drips from aircraft onto pavement during taxiing and takeoffs is allowed to evaporate.
- Snow with propylene glycol is primarily found in designated aircraft deicing areas and kept in these designated areas shown on the Site Map in Attachment 1 and the annual CLE Deicing Management Plan. The designated areas help minimize stormwater impacts from snowmelt containing ADF by utilizing recovery management infrastructure and Best Management Practices (BMPs).
- Vegetated swales and grassed areas filter and infiltrate runoff before it reaches the drainage system.
- BMPs such as detention and retention basins, underground detention, sand filter, stormwater oil-water separators, and bioretention swales are used across the footprint of CLE.
- Catch basins and underground piping convey storm water runoff to BMPs to control storm water discharges. They are cleaned on an as needed basis.

Table 3.1 provides a summary of the stormwater controls in place across CLE to treat, contain, and otherwise reduce stormwater runoff.

Table 3.1 Outfalls and Stormwater Controls

Drainage Area Description	Area (Acres)	Stormwater Controls	Receiving Stream
Outfall 001	59	None	Silver Creek
Outfall 002	190	North Detention Basin and Oil-Water Separator	Silver Creek
Outfall 003	43	None	Abram Creek
Outfall 008	108	Glycol Recovery System and Oil-Water Separator	Rocky River
Outfall 010	13	None	Rocky River
Outfall 011	5	None	Rocky River
Outfall 012	1170	Central Detention Basin, Centralized Deicing Facility, Underground Detention Systems, Sand Filter, Bioretention Cells, Vegetated Roofs, and Oil-Water Separators	Abram Creek
Outfall 013	16	South Retention Basin	Abram Creek
Rental Car Facility and Maplewood Area	192	North Detention Basin	Silver Creek
Riveredge Parking Lot	17	River Edge Retention Basin and Two Bioretention Cells	Silver Creek
TOTAL	1,813		

3.7. SALT STORAGE PILES

There are no outdoor salt storage piles at CLE. Refer to Section 2.4.

3.8. MSGP SECTOR-SPECIFIC, NON-NUMERIC EFFLUENT LIMITS

The following additional Control Measures/BMPs apply to MSGP Part 8, Sector-Specific Requirements for Industrial Activity, Subpart S – Sector S – Air Transportation.

Good Housekeeping Measures

Specific practices that can be used at CLE include the following:

- Use of DPC and contractors to remove rubber and rubber dust and debris collected on the runways and taxi areas as well as interior roadways.
- Those areas that flow to a storm drain must be cleaned by means other than hosing down an area to a storm drain. Examples of acceptable cleaning procedures include mop up, the use of absorbents for liquid spills, and wet vacuum cleaners.
- Maintenance of aircraft is to be done indoors.
- Minor cleaning of aircrafts is conducted indoors or outdoors using dry washing techniques.
- Equipment and vehicles are hosed off inside the DPC maintenance building (“Wash Bay”), which drains to an oil-water separator connected to the sanitary sewer (inspected quarterly

and cleaned out annually or as needed). An outdoor vehicle wash and roll-off dumpster pad ("Wash Pad") is located at the Consolidated Maintenance Facility (CMF) for removal of heavy debris and street sweepings. The Wash Pad is connected to a sediment chamber and the sanitary sewer.

- Cleaning activities for equipment or vehicles is performed indoors or using dry washing techniques or without detergents.
- Draining all equipment of fluids prior to disposal. Diesel fuel is removed to approximately ¼ tank from vehicles awaiting auction.
- Used oil is stored at the CMF-Vehicle Maintenance Building (CMF-VMB) and used for supplemental heat in the winter months. Regular and routine pick-up of waste material for disposal or recycling is done.
- Routine inspection of dumpsters to verify that they are covered and not overfilled.
- Routine inspection of trash and recycling compactors for hydraulic leaks and debris around them.
- Placement of spill kits in strategic locations to prevent spills from reaching open storm sewers.
- Secondary containment berms installed around oil containing equipment if there is a leak.
- Glycol valve inserts installed in concourse catch basins.
- Routine inspection of equipment for leaks or conditions that could lead to discharges of pollutants and contact with stormwater.
- Periodic inspection of drip pans and secondary containment areas (if necessary, empty secondary containment areas after checking that the stormwater is not contaminated).

Aircraft, Ground Vehicle, and Equipment Maintenance Areas

Preventative maintenance activities are conducted for aircraft, ground vehicles, and equipment operated at CLE. CLE vehicle maintenance is performed inside the CMF-VMB. Additionally, maintenance activities are performed indoors in areas that drain to oil-water separators connected to the sanitary sewer system. When maintenance occurs, prompt cleanup of spills and leaks is conducted using dry cleanup materials to help minimize potential drainage to outdoor areas and impacts on stormwater discharges. The oil-water separator at the CMF-VMB is inspected quarterly and cleaned out annually or as needed.

Aircraft, Ground Vehicle, and Equipment Cleaning Areas

CLE equipment and vehicles are hosed off within the Wash Bay inside the CMF-VMB and at the ARFF facility. Typical contaminants associated with washing include oil and grease, petroleum hydrocarbons, deicers, and sediment. At the CMF, an outdoor Wash Pad and sediment chamber was installed in 2013 and was modified as part of the CMF additions (VMB and SRE) project. The Wash Pad allows removal of heavy soil and debris to reduce solids in wash water, washing out equipment, and staging of roll-off dumpster for solids disposal. The discharge created by the cleaning activities is collected by a catch basin with a sediment sump located at the low point of the pit and discharges to a sediment chamber before discharging to the sanitary system.

Sediments are properly disposed of as solid waste. The construction and installation of a 25,000-gallon oil-water separator to treat stormwater from the north and west sides of the CMF occurred in 2013.

Aircraft, Ground Vehicle, and Equipment Storage Areas

Whenever possible, aircraft are stored inside hangars or designated maintenance areas, and ground vehicles and equipment are generally stored indoors (or if outdoors, in designated areas). Storage is provided within the CMF-VMB, at the CMF-SRE, and at the ARFF facility to the extent possible. Periodic inspections are performed for outside equipment storage areas to identify drips or leaks from equipment, especially for equipment stored outdoors. If noted, drip pans are placed under the drip or leak and maintenance is scheduled as soon as practicable.

Material Storage Areas

Bulk chemicals and fuels are handled and stored at various locations at CLE and are indicated on the Site Map in Attachment 1. Liquid potassium acetate is stored outside in ASTs at the Snow Barn, at the CMF, and/or within a deicing truck. Glycol for aircraft deicing is stored at the Centralized Deicing Facility (four 20,000-gallon Type I and two 10,000-gallon Type IV) and tenant hangars or within deicing trucks. Fuel is stored in underground storage tanks (USTs), ASTs, mobile re-fuelers, and hydrant fuel systems. Drums and small containers containing oils, deicers, cleaning products, and cleansers are also used. Secondary containment is provided for all petroleum ASTs per the current SPCC Plan.

Airport Fuel System and Fueling Areas

Aircraft are fueled on the apron using mobile re-fuelers around Concourses A, B, and parts of C and fuel hydrant systems around Concourse C rotunda. Concourse D also has a hydrant system but Concourse D is not in use. Vehicle and equipment diesel fueling takes place at the CMF fuel island. DPC personnel are required to attend the operation while fueling occurs. Fuel is transferred at a rate of 20 to 30 gallons per minute (GPM). In the event of an equipment failure during fuel transfer, due to the proximity of the operator to the equipment, fuel flow could be stopped by the operator within 15 seconds.

Vehicle and equipment diesel and gasoline fueling takes place at the Snow Barn fuel island. DPC personnel are required to attend the operation while fueling occurs. Fuel is transferred at a rate of 10 GPM. In the event of an equipment failure during fuel transfer, due to the proximity of the operator to the equipment, fuel flow could be stopped by the operator within 15 seconds.

Spill kits are located and maintained at all fueling areas. Oil-water separators have been installed throughout CLE and are an effective means to contain spills.

Source Reduction

Neither urea nor ethylene glycol is used at CLE. These materials were replaced with potassium acetate, potassium formate, sodium acetate, sodium formate, and propylene glycol. Sand is used for traction and to reduce the amount of ADF used. CLE is currently evaluating pavement deicing application and control techniques to track and control the amounts required while assuring aircraft safety. CLE receives deicing totals from tenants and field maintenance.

The average seasonal timeframe during which aircraft and pavement deicing/anti-icing activities occur at CLE is between October and April. The Aircraft Anti-icing / Deicing and Discharge

Management Plan (Plan) was formulated to implement BMPs. The plan is updated annually, if needed, and is included in Attachment 5. The intent is to ensure safe winter operations while being compliant with environmental permits. The objective is to manage the collection of deicing fluid before, during, and after deicing events, and to route accumulated fluids to appropriate disposal facilities.

All efforts will be made to remove snow prior to deicing activities. There will be no aircraft anti-icing / deicing operations conducted over open drains, with the exception of those activities at the CDF where spent fluid is collected via the drainage system and sewer inserts are present and closed.

DPC maintenance staff are responsible for deicing airfield pavement surfaces including runways and taxiways, and aprons using liquid potassium acetate, solid sodium formate, and sand. DPC also performs deicing for walkways and other paved areas airside around the terminal using sodium formate. Tenants perform pavement deicing for walkways and ramp deicing using sodium formate or other permissible pavement deicers. Conventional deicers (i.e., NaCl, CaCl, etc.) are not permitted on the airfield but are used by DPC and tenants on landside surfaces.

Management of Runoff

Runoff management is performed through the following methods:

- A Centralized Deicing Facility (CDF) and the West Cargo Ramp are used to contain and capture aircraft ADF fluids.
- Vacuum trucks are utilized to recover excess ADF fluids.
- Aircraft ADF (propylene glycol) is captured for potential recycle and/or discharge to the Northeast Ohio Regional Sewer District sanitary sewers.
- Vegetated swales and grassed areas filter and infiltrate runoff before it reaches the drainage system.
- Vegetated roofs are installed at Concourse A and Concourse B covering approximately 7,300 square feet.
- Detention Basins, underground sand filter, and bioretention cells are present at numerous locations.
- Catch basins and underground piping is installed to convey stormwater runoff and control storm water discharges.
- Periodic cleaning of the storm sewer system is performed.
- Stormwater oil-water separators are located around the facility to reduce petroleum.

Equipment Storage

Equipment used for airport operations is stored both indoors and outdoors at the CMF-VMB and CMF-SRE, ARFF facility, and various garages and tenant hangars. Equipment stored outdoors has the potential to result in oil and grease or chemicals, such as lubricating oils, hydraulic oils, or fuels, becoming entrained in stormwater runoff and entering the stormwater drainage system if leaks are not properly cleaned up.

Fire Fighting Foam/Powder Discharges

ARFF vehicles contain fire-fighting foam that is sprayed in the event of a fire. Routine testing of firefighting equipment is performed by Aircraft Rescue and Fire Fighting (ARFF). Foam and powder (dry chem) testing are performed in closed loop testing.

Runway, Taxiway, and Apron Maintenance

DPC hires a contractor to perform annual runway rubber removal. Runway rubber removal is performed by driving a truck over airfield surfaces and applying pressurized water to remove rubber, with sweeper trucks following to recover removed rubber missed by the removal vehicle. DPC Field Maintenance personnel also routinely perform runway maintenance and pavement cleaning using sweeper trucks. Recovered debris from rubber removal is dewatered at the Wash Pad and solids are disposed of as solid waste.

Deicing Season

The average seasonal timeframe during which aircraft and pavement deicing/anti-icing activities occur at CLE is between October and April. The CDF and West Cargo Ramp are valved so that throughout the summer months stormwater is allowed to flow to the NPDES permitted outfalls. Once deicing of airplanes and runways begin, the valves are switched to collection of deicing fluids. They are generally maintained in collection mode throughout the winter, unless there is an unusually lengthy warm period. An Aircraft Anti-icing / Deicing and Discharge Management Plan (Plan) has been formulated to implement BMPs. The intent is to ensure safe winter operations while being compliant with environmental permits. The objective is to manage the collection of deicing fluid before, during, and after deicing events, and to route accumulated fluids to appropriate disposal facilities. The Plan addresses the anti-icing and deicing activities and operations that are conducted at CLE. The Plan is included in Attachment 6.

3.9. EMPLOYEE TRAINING

All personnel who work in areas of industrial activity, who can impact stormwater through their daily activities, who are responsible for implementing activities identified in this SWPPP, or who are responsible for stormwater management, will receive training every year to refresh and update them on the components and goals of the SWPPP. On-site contractors and temporary personnel are also to be informed of the operating procedures that were designed to help prevent accidental discharges or spills. Training topics include spill prevention and response, good housekeeping, and material management practices.

The training program includes the following pollution prevention topics:

- The requirements for stormwater pollution prevention (environmental and regulatory)
- Purpose of the SWPPP
- Personnel responsibilities
- Description of the potential pollutant sources
- Familiarizing personnel with locations of storm drain inlets
- Prohibiting the pouring of non-stormwater materials into storm drains
- The impact of soil erosion on stormwater quality
- Material handling procedures and storage requirements

- Explanation of secondary containment and drip pans, their purpose, importance, and correct procedure for releasing stormwater
- Identification of potential spill areas and drainage routes, including information on the causes of past spills
- Measures to eliminate or reduce pollutants such as good housekeeping; preventive and routine maintenance inspections; proper spill response procedures, including reporting spills to appropriate individuals; and sediment and erosion control
- Importance of record-keeping and follow-up

In addition to the stormwater pollution prevention topics listed above, general good housekeeping procedures will be covered in all training sessions. The following good housekeeping points to emphasize are:

- Prompt cleanup of spilled materials to prevent contaminated runoff
- Identification of places where brooms, vacuums, absorbents, foams, neutralizing agents, and other good housekeeping and spill-response equipment are located
- Instruction on securing drums and containers and checking for leaks and spills
- Regular scheduling of housekeeping activities

An Employee Training Documentation Form is included in Appendix B. In addition to training sessions, personnel awareness can also be emphasized by:

- Labeling the storm drain inlets so that personnel are aware of the direct impact of their actions on stormwater runoff
- Posting prominent signs prohibiting the washing of equipment near storm drains
- Posting prominent signs prohibiting the disposal of non-stormwater material in storm drains
- Posting prominent signs discouraging topping off fuel tanks (to minimize spill probability)
- Posting bulletins on updated maintenance practices and stormwater issues

3.10. NON-STORMWATER DISCHARGES

See Section 2.3.

3.11. WASTE, GARBAGE, AND FLOATABLE DEBRIS

Garbage related containment boxes are stored where needed and are to be kept with lids closed to prevent rainwater from mixing with general trash. Compactors are used where appropriate. General construction refuse, such as wood and plastic, are stored in roll-off boxes when needed. Areas across CLE where roll-off boxes are used to accumulate construction debris are monitored during routine inspections.

3.12. DUST GENERATION AND VEHICLE TRACKING OF INDUSTRIAL MATERIALS

Road dust generated from construction activities along interior roads is addressed with a routine program that utilizes street sweepers to remove accumulated dust and grit for proper disposal. At no time is it acceptable to allow tracking of interior road accumulations onto public roadways. Street sweepers and/or other equipment will be utilized to eliminate any accumulations. Project

specific construction SWPPPs are required and detail approaches to the management of dust and vehicle tracking.

SECTION 4: SCHEDULES AND PROCEDURES FOR MONITORING

CLE is regulated by Individual NPDES Permit 3II00179*FD. This permit contains schedules and procedures for monitoring at stormwater outfalls 001, 002, 003, 008, 010, 011, 012, and 013. Monitoring of the discharge from these outfalls is required throughout the year on a daily, weekly, and monthly basis. Specific sampling requirements are listed within each final effluent table when sampling during the deicing season.

SECTION 5: INSPECTIONS AND ASSESSMENTS

5.1. ROUTINE FACILITY INSPECTIONS

Routine site inspections will be performed on at least a quarterly basis, with monthly site inspections occurring during deicing season. At a minimum, each routine facility inspection will include:

- The inspection date and time
- The name(s) and signature(s) of the inspector(s)
- Weather information and a description of any discharges occurring at the time of the inspection
- Any previously unidentified discharges of pollutants from the site
- Any control measures needing maintenance or repairs
- Any failed control measures that need replacement
- Any incidents of noncompliance observed
- Any additional control measures needed to comply with the permit requirements

Refer to Appendix C for a copy of the Routine Inspection Form.

5.2. QUARTERLY VISUAL ASSESSMENTS

Once each calendar quarter for the entire permit term, a storm water sample will be obtained from each outfall that requires sampling under this permit and a visual assessment conducted of the samples. These samples will be collected in such a manner that the samples are representative of the stormwater discharge. The visual assessment shall be made:

- Of a sample in a clean, clear glass or plastic container, and examined in a well-lit area.
- On samples collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample should be collected as soon as practicable after the first 30 minutes and the collector should document why it was not possible to take samples within the first 30 minutes. In the case of snowmelt, samples should be taken during a period with a measurable

discharge from the site.

- For storm events, on collection of discharges that occur at least 72 hours (three days) from the previous discharge. The 72-hour (three-day) storm interval does not apply if documented that less than a 72-hour (three-day) interval is representative for local storm events during the sampling period. If it is not possible to collect the sample on discharges that occur at least 72 hours (three days) from the previous discharge, the sample should be collected as close to this storm interval as practicable, and the collector should document why it was not possible to take samples from a 72-hour (three day) storm interval.
- In areas subject to snow, at least one quarterly visual assessment should capture snowmelt discharge.
- For the following water quality characteristics: color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution.

Refer to Appendix D for a copy of the Quarterly Visual Assessment Form.

5.3. COMPREHENSIVE ANNUAL SITE INSPECTION REPORT

An annual facility compliance inspection will be conducted. The inspection will be adequate to verify that site drainage conditions and potential pollution sources identified in the SWPPP remain accurate, and that the BMPs prescribed in the SWPPP are being properly implemented and adequately maintained.

Inspectors shall examine the following:

- Industrial materials, residue or trash that may have come in contact with storm water
- Leaks or spills from industrial equipment, drums, tanks, and other containers
- Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site
- Tracking or blowing of raw, final or waste materials from areas of no exposure to exposed areas
- Control measures needing replacement, maintenance or repair

Documentation of this inspection will include the following information:

- The date of the inspection
- The name(s) and title(s) of the personnel making the inspection
- Findings from the examination of areas of your facility identified in Section 5.1 above
- All observations relating to the implementation of your control measures including:
    - previously unidentified discharges from the site
    - previously unidentified pollutants in existing discharges
    - evidence of, or the potential for, pollutants entering the drainage system

  - evidence of pollutants discharging to receiving waters at all facility outfall(s), and the condition of and around the outfall, including flow dissipation measures to prevent scouring
  - additional control measures needed to address any conditions requiring corrective action identified during the inspection
- Any required revisions to the SWPPP resulting from the inspection
- Any incidents of noncompliance observed or a certification stating the facility is in compliance with this permit (if there is noncompliance)

An Annual Comprehensive Site Evaluation Form (The USEPA Annual Reporting Form), listing the items to be documented, has been prepared and is included in Appendix E for use each year.

Once completed, these forms are to be stored with this SWPPP for a period of not less than three years.

SECTION 6: SWPPP CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Kim McGreal Title: Airport Environmental & Sustainability Manager

Signature: Kim McGreal Digitally signed by Kim McGreal DN: cn=Kim McGreal, o, ou, email=kmcgreal@clevelandairport.com, c=US Date: 2023.11.01 15:47:05 -04'00' Date: 11/01/2023

SECTION 7: SWPPP MODIFICATIONS

An updated log of all SWPPP amendments will be kept. A copy of the log is provided in Appendix F.

SWPPP ATTACHMENTS

Attachment 1: CLE Site Map

Attachment 2: Industrial Activities, Potential Pollutants, and Control Measures

Attachment 3: NPDES Permit 3II00179*FD

Attachment 4: Stormwater Master Plan

Attachment 5: Aircraft & Pavement Anti-Icing/Deicing and Discharge Management Plan

ATTACHMENT 1: CLE SITE MAP

LEGEND	
PROPERTY LINE	
EXISTING CONTOURS	760
DRAINAGE AREA BOUNDARY	
PRIMARY SNOW PILE LOCATIONS	
BMP	
OUTFALL 001	
OUTFALL 002	
OUTFALL 003	
OUTFALL 008	
OUTFALL 010	
OUTFALL 011	
OUTFALL 012	
OUTFALL 013	
OIL WATER SEPARATOR	

NORTH DETENTION BASIN (NDB)

RETENTION BASIN (NOT OWNED BY CITY OF CLEVELAND)

RENTAL CAR FACILITY

OUTFALL 002

OUTFALL 001

OUTFALL 008

OUTFALL 011

OUTFALL 010

WEST CARGO RAMP DEICING FACILITY

VEGETATED ROOF (2)

CENTRALIZED DEICING FACILITY

PARKING LOT BIORETENTION CELLS

CELL PHONE LOT

UNDERGROUND STORMWATER MANAGEMENT FACILITY

UNDERGROUND STORMWATER STORAGE

DEICING DISPOSAL FACILITY

CENTRAL DETENTION BASIN (CDB)

OUTFALL 012

OUTFALL 003

OUTFALL 013

SOUTH RETENTION BASIN (SRB)

RUNWAY 10-28 - 6018' X 150' CAT I

RUNWAY 6R-24L - 9000' X 150' CAT III

RUNWAY 6L-24R - 9955' X 150' CAT III

ASOS

PAD 1 (DEICING PAD)

PAD 2 (DEICING PAD)

PAD 3

PAD 5

PAD 7

FX CENTER LEASE LINE

GRAPHIC SCALE
600 0 300 600 1200
SCALE IN FEET

CLE
CLEVELAND HOPKINS INTERNATIONAL AIRPORT

Cleveland Hopkins International Airport

Cleveland, Ohio

Project Title: NPDES PERMIT SITE MAP

Sheet Title: DRAINAGE & STOMWATER OUTFALLS

Designed:	Drawn:	Checked:	Approved:
ENVIROSCIENCE, INC.	SDR	SDR	
		Scale: 1" = 600' FULL SIZE	WBS No.:
		Date: JUNE 30, 2023	Sheet:

ATTACHMENT 2: INDUSTRIAL ACTIVITIES, POTENTIAL POLLUTANTS, AND CONTROL MEASURES

Outfall	Industrial Activities	Exposures	Potential Pollutants	Control Measures
001	No Significant Aircraft Deicing /Anti-icing or Pavement Deicing occurs in this watershed	No Significant Exposure.	N/A	None
002	Aircraft Deicing/Anti-Icing	Aircraft Deicing/Anti-Icing Materials	-BOD -Propylene Glycol	-Oil-Water Separator x2 -North Detention Basin -Grass Infield Areas and Swales for Filtration and Infiltration -Spill Kits -BP Fuel Farm has Industrial Stormwater Permit
	Pavement Deicing	Pavement Runoff	-TSS -TDS -Sodium -Potassium -BOD/COD	
	Aircraft Fueling	Transfer of Fuel	Jet A Fuel	
	Aircraft and Airport Related Ground Support Equipment and Vehicular Traffic	-Leaks -Glycol -Transfer of Fuel -Rubber Tire	-TSS -Propylene Glycol -BOD/COD -Diesel -Oil -Gasoline	
	BP Fuel Farm	Transfer of Fuel From Above Ground Piping and Mobile Fuel Vehicles	-Jet A -Diesel -Gasoline	
	Aircraft Lavatory Service	Lavatory Waste	-BOD -E.coli	
003	Pavement Deicing	Pavement Runoff	-TSS -TDS -Sodium -Potassium -BOD/COD	-Oil-Water Separator -Grass Infield Areas and Swales for Filtration and Infiltration -Spill Kits
	Deicing Disposal Facility	Glycol Storage	Propylene Glycol	
	Aircraft and Airport Related Ground Support Equipment and Vehicular Traffic	Leaks Glycol Transfer of Fuel Rubber Tire	-TSS -Propylene Glycol -BOD/COD -Diesel -Oil -Gasoline	
008	Aircraft Deicing/Anti-Icing	Aircraft Deicing/Anti-Icing Materials	-BOD -Propylene Glycol	-Stormwater from West Cargo Ramp diverted to NEORSD in winter (during deicing); during winter months <u>Pavement Deicing</u> and <u>Aircraft & Airport Related Ground Support Equipment & Vehicular Traffic</u> are Primary Industrial Activities in 008. -West Cargo Ramp Storm Oil-Water Separator (summer months). -Grass Infield Areas and Swales for Infiltration -Spill Kits
	Pavement Deicing	Pavement Runoff	-TSS -TDS -Sodium -Potassium -BOD/COD	
	Aircraft Fueling	Transfer of Fuel	Jet A Fuel	
	Aircraft and Airport Related Ground Support Equipment and Vehicular Traffic	-Leaks -Glycol -Transfer of Fuel -Rubber Tire	-TSS -Propylene Glycol -BOD/COD -Diesel -Oil -Gasoline	
	Glycol Storage	Transfer of Glycol	Propylene Glycol	
	Lavatory Service	Lavatory Waste	-BOD -E.coli	
010	Pavement Deicing	Pavement Runoff	-TSS -TDS -Sodium -Potassium -BOD/COD	-Grass Infield Areas and Swales for Infiltration
011	Airport Related Ground Support Equipment and Vehicular Traffic	Leaks Transfer of Fuel Rubber Tire	-BOD/COD -Diesel -Oil -Gasoline	-Grass Infield Areas and Swales for Infiltration -Spill Kits
	Pavement Deicing/Anti-Icing (Landside)	Pavement Runoff	-TSS	

Outfall	Industrial Activities	Exposures	Potential Pollutants	Control Measures
012	Aircraft Deicing/Anti-Icing	Propylene Glycol	-BOD -Propylene Glycol	-Propylene Glycol Collection Within Centralized Deicing Facility. -Deicing Pad Drainage Diverted to Sanitary Sewers During Deicing Season. -Grass Infield Areas and Swales for Filtration and Infiltration. -Spill Kits. -Multiple Oil-Water Separators -Central Detention Basin -Multiple Underground Detention -BMPs such as Bioretention Cells, Sand Filter, Vegetated Roofs -CMF Heavy Solids Wash Pad - Conduct and Document Periodic Inspections of Area Where Equipment is Stored to Detect Spills or Contaminants.
	Aircraft and Airport Related Ground Support Equipment and Vehicular Traffic	-Leaks -Glycol -Transfer of Fuel -Rubber Tire	-TSS -Propylene Glycol -BOD/COD -Diesel -Oil -Gasoline	
	Aircraft Fueling	Jet Fuel	Jet A Fuel	
	Pavement Deicing	Pavement Runoff Transfer of Fluids form Bulk Storage	-TSS -Sodium -Potassium	
	Equipment Storage	Associated Fluids and Spills/Leaks	-Oil -Gas -Diesel -TSS	
	Equipment and Vehicle Maintenance	-Leaks -Used Oil AST -Gas AST -Diesel AST	Oil Gas Diesel	
	Equipment and Vehicle Fueling	-Gasoline AST -Diesel AST	-Gasoline -Diesel Fuel	
	Trash Compactor	-Municipal Waste -Equipment Hydraulics	-Leachate -Oils	
	Aircraft Lavatory Service	Lavatory Waste	-BOD	
	South Fuel Farm	Transfer of Fuel	-Jet A Fuel	
	Bulk Storage of Anti-icing and Deicing Materials	Transfer of Solid and Liquid Materials	-Chloride -Potassium -Sodium	
	Restaurant Waste Management	Used grease storage tanks from concession areas	-Oil/Grease	
	North and South Batch Plant Areas	Clean Hard Fill and Exposed Soils	-TSS	
013	Equipment Storage	Mobile Fueling Equipment	-Jet A	-South Retention Basin -Grass Swales for filtration and Infiltration -Spill Kits
	Pavement Deicing	Pavement Runoff	TSS	
	Aircraft and Airport Related Ground Support Equipment and Vehicular Traffic	-Leaks -Propylene Glycol -Transfer of Fuel -Rubber Tire	-TSS -Propylene Glycol -BOD/COD -Diesel -Oil -Gasoline	
	Aircraft Deicing/Anti-Icing	Propylene Glycol	-BOD -Propylene Glycol	

ATTACHMENT 3: NPDES PERMIT 3II00179*FD

ATTACHMENT 4: STORMWATER MASTER PLAN

ATTACHMENT 5: AIRCRAFT & PAVEMENT ANTI-ICING/DEICING AND DISCHARGE MANAGEMENT PLAN

CLE™
CLEVELAND HOPKINS
INTERNATIONAL AIRPORT

AIRCRAFT & PAVEMENT ANTI-ICING / DEICING

AND DISCHARGE MANAGEMENT PLAN

Revised September 2023

TABLE OF CONTENTS

Acronyms of Basic Airport and Deicing Terms

AOA	Aircraft Operating Area
ATC	Air Traffic Control
BMP	Best Management Practice
CDF	Centralized Deicing Facility
CLE	Cleveland Hopkins International Airport
CMF	Consolidated Maintenance Facility
DPC	Department of Port Control
DWD	Dry Weather Deicing
FAA	Federal Aviation Administration
FBO	Fixed Based Operator
GRV	Glycol Recovery Vehicle
GSE	Ground Service Equipment
NEORSD	Northeast Ohio Regional Sewer District
NPDES	National Pollutant Discharge Elimination System
Ohio EPA	Ohio Environmental Protection Agency
PA	Potassium Acetate
PF	Potassium Formate
PG	Propylene Glycol
RWY	Runway
SA	Sodium Acetate
SF	Sodium Formate
SSSP	Significant Storm Surge Protection
TWY	Taxiway

Contacts

DPC Airport Operations	(216) 265-6090
DPC Environmental Services	(216) 857-6867 (cell) (216) 265-6615 (office)
AeroMag, Aircraft Deicing Application	(216) 267-0011
AeroMag, Spent Aircraft Deicing Collection	(216) 375-0044

1.0 INTRODUCTION

The City of Cleveland owns and operates, through the Department of Port Control (DPC), the Cleveland Hopkins International Airport (CLE) gateway to the Northeast Ohio Region. Pursuant to charter requirements, the DPC is tasked to promulgate rules and regulations that address good environmental stewardship of the Airport. This document addresses the management of aircraft and pavement deicing activities and the management of waste deicing fluids.

The Aircraft & Pavement Anti-icing / De-icing and Discharge Management Plan (Plan) was formulated to implement Best Management Practices (BMPs). The intent is to ensure safe winter operations while being compliant with environmental permits and orders. The objective is to report and manage the collection of deicing fluid and pavement materials before, during, and after deicing events, and to route accumulated fluids to appropriate disposal facilities.

The Plan addresses the anti-icing and de-icing activities and operations that are conducted by the DPC, tenants, airlines and Fixed Based Operators (FBOs) at CLE to ensure all parties are informed to discuss CLE winter activities and changes within the industry. These activities include: Centralized Deicing Facility (CDF), West Cargo Ramp (WCR), on-gate airline and FBO anti-icing and de-icing, runway/taxiway and ramp pavement deicing, fluid collection and discharge, enforcement program, safety program, chemicals approved for use, communication and protocols between tenants and DPC staff.

1.1 Schedule of Compliance

DPC and its tenants, airlines, and FBOs are committed to managing aircraft anti-icing/de-icing and pavement chemicals in the most cost efficient and environmentally sound manner available. DPC goals are to meet Ohio Environmental Protection Agency (Ohio EPA) National Pollutant Discharge Elimination System (NPDES) permitting requirements and Northeast Ohio Regional Sewer District (NEORSD) Administrative Order for discharge of collected fluids properly, and to collect the spent deicing fluids with the highest concentrations achievable for recycling. The goals will be achieved by having an

accepted Plan, monitoring CLE operations with adherence to the Enforcement Policy within this Plan, and monitoring outfall discharges as a result of aircraft and pavement anti-icing and de-icing activities. At the end of each winter season, an end of the year summary report is prepared and kept on file in the DPC Environmental Services Office.

DPC is targeting the reduction, disruption, or elimination of nuisance blooms associated with CLE discharges. Biofilms are described as a matrix of living organisms, including fungi, algae, bacteria, dead and decomposing cells, and extracellular material that attaches to various substrates at the water/substrate interface of aquatic environments.

Although biofilms are the most important primary producers in small rivers and streams, Ohio EPA has determined that the conditions observed in Abram Creek at times constitute a nuisance. Efforts of Biofilm Project will not be focused on eliminating sources of biofilm growth or naturally occurring stream biofilm growths, but rather on those observed growths that are related to CLE influences and discharges. Achievement of the Biofilm Project objectives will allow for the development of treatment options, performance of bench top studies, and implementation of the best available technology economically achievable to mitigate nuisance blooms.

In the most recent NPDES permit (3II00179*FD) for storm water discharges from CLE, the Ohio EPA included a condition requiring CLE to continue updating and implementing a long-term Anti-icing and De-icing Materials (ADM) runoff management program (includes this plan) to eliminate the contribution to the nuisance biofilm growth problem in Abram Creek. CLE developed a comprehensive phased approach to explore the specific factors that contribute to biofilm growths observed in Abram Creek. Based upon the results of investigations and concurrent water quality efforts in Abram Creek, CLE is investigating water quality components in the engineering design of stormwater improvements to promote on-site assimilation of materials prior to discharge to inform future management decisions.

2.0 AIRCRAFT AND PAVEMENT ANTI-ICING/DE-ICING OPERATIONS

General conditions for aircraft and pavement anti-icing/deicing operations at CLE are described in Section 2.1. This is followed by a detailed discussion of Standard Procedures in Section 2.2 and allowable Gate Procedures in Section 2.3. These procedures were developed in partnership with DPC tenants and airlines managers as well as the Federal Aviation Administration (FAA).

Aircraft Anti-icing / De-icing Activities are sub-divided into winter and summer (Dry Weather) seasons. Winter season activities (extending from *approximately* October 15th through April 15th) must adhere to the approved deicing locations and methodologies outlined in Sections 2.1, 2.2, and 2.3 of this Plan. Summer (Dry Weather) season (extending from *approximately* April 16th through October 14th shall follow the guidelines as outlined in Section 2.4 of this Plan.

The Centralized Deicing Facility (CDF) is illustrated in Figure 1. The Applicator/Operator is a contractor to the airlines and is responsible for applying the anti-icing and de-icing fluid to the aircraft. The Collection Contractor is also a contractor to the airlines and is responsible for spent fluid collection at all approved de-icing locations (Figure 2), recycling fluids as applicable, appropriate discharge of non-recycled fluids to NEORSD, and maintenance and upkeep of the collection systems.

- The Centralized Deicing Facility (CDF) consists of two pads identified as Pad-1 and Pad-2
- The West Cargo Ramp consists of one pad
- AeroMag: Applicator/Operator licensed to use the CDF for aircraft deicing activities
- AeroMag: Collection Contractor

2.1 General Winter Season Protocol

The winter anti-icing / de-icing season extends from October 15th through April 15th of the following year **(operations may commence earlier and terminate later due to CLE forecast)**. During the winter season the following general protocols will apply.

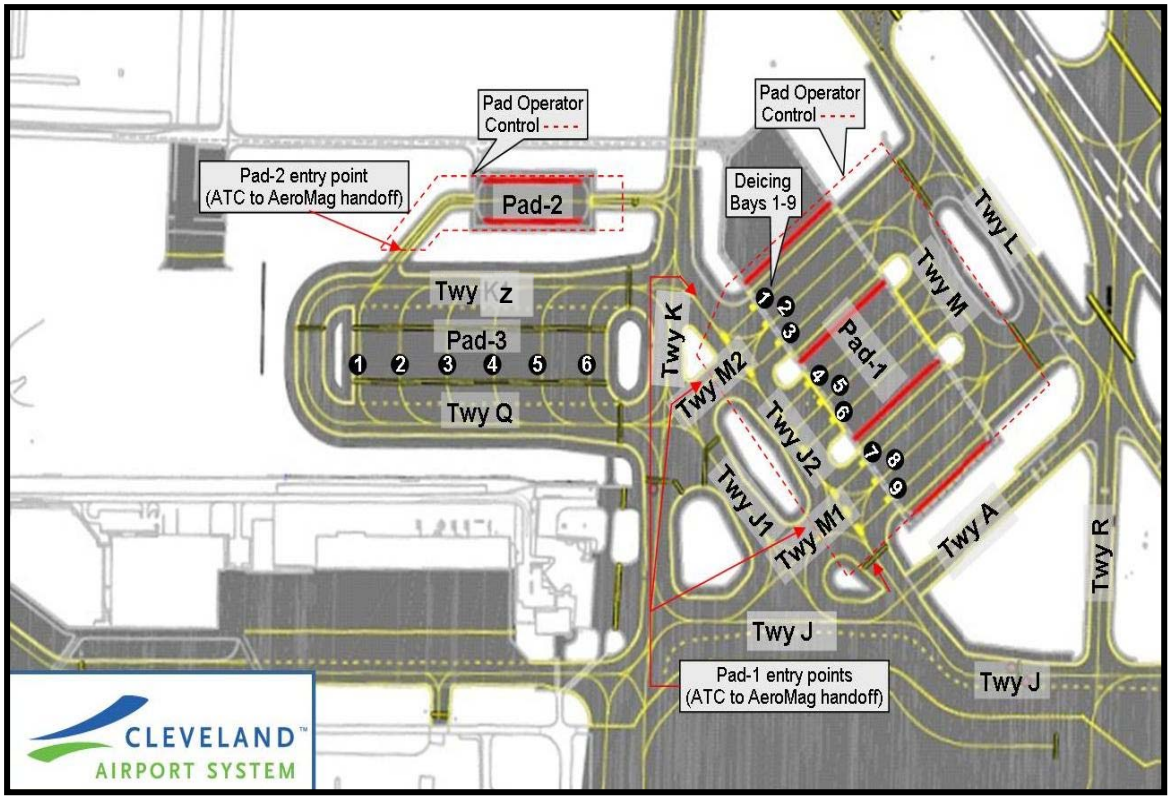


Figure 2.1: Centralized Deicing Facility (CDF)

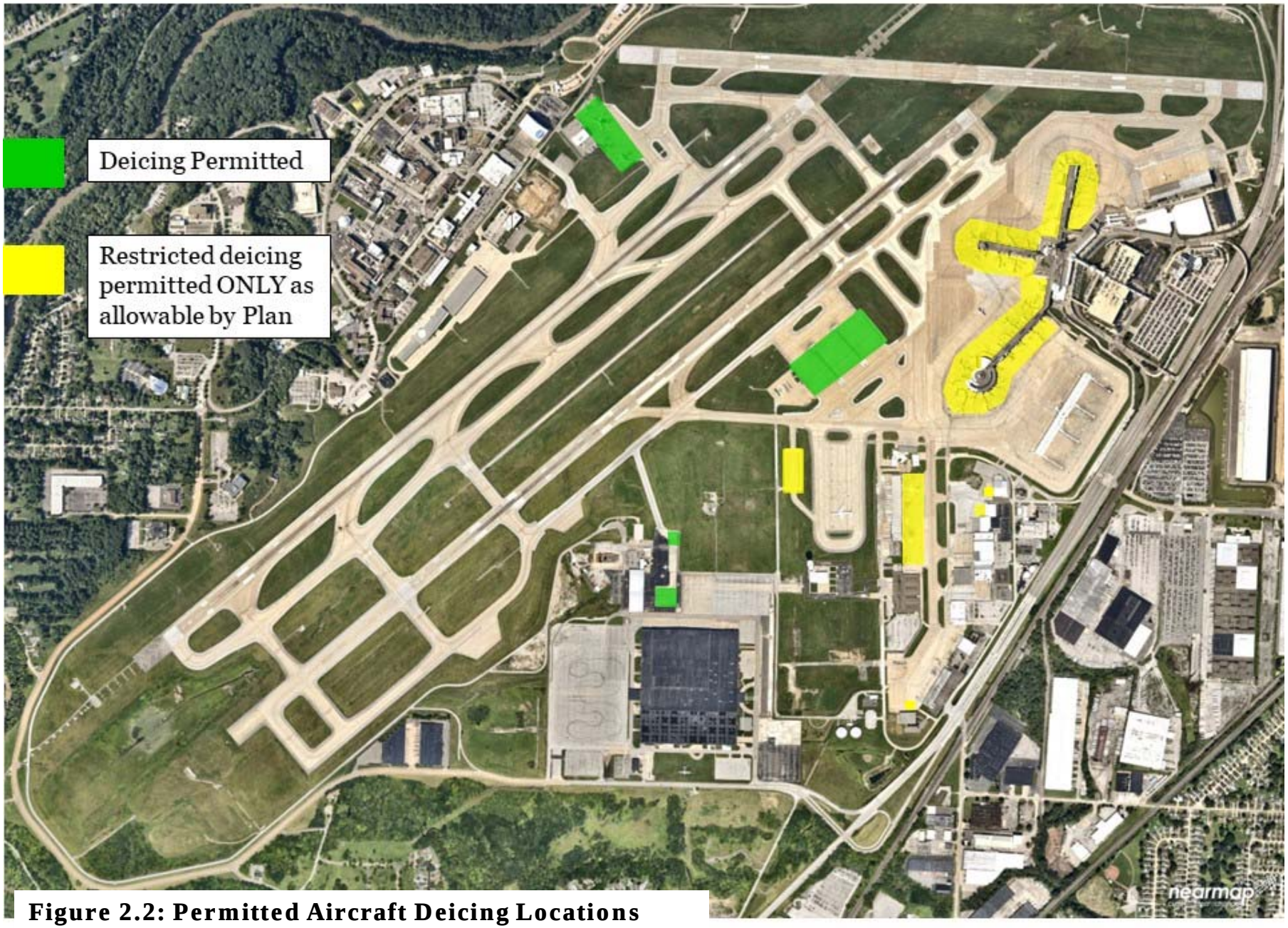


Figure 2.2: Permitted Aircraft Deicing Locations

2.1.1 General Provisions

All efforts shall be made to remove snow prior to deicing activities. There will be no aircraft anti-icing / de-icing operations conducted over open drains, with the exception of those activities at the CDF where spent fluid is collected via the drainage system. If fluid is discovered flowing toward unauthorized open drains, DPC Airport Operations must be contacted *immediately* at (216) 265-6090. Airport Operations will alert the Collection Contractor to assist in controlling fluid.

All airlines/tenants shall make proper notification (Sections 2.2 and 2.3) when activating aircraft defrosting or de-icing activities. This notification will include the expected times of deicing, types and volumes of de-icing fluid, and pavement deicing amounts as well as any company/operation specific requests that may enhance the efficiencies of aircraft movement.

Tenants will record amounts and type of aircraft and pavement deicing chemicals expended along with any relevant operational data (Section 7.0 and Attachment C) by 0800 hours the day following application use, emailed to DPC-Environmental@clevelandairport.com.

Ground support vehicle access to the CDF (Pad-1 or Pad-2) will be gained using the access/service road leading to the pad from the East Gate (E-24B) Service Road. Access to CDF Pad-1 requires crossing Taxiway K, which is an active taxiway. Only authorized personnel with Aircraft Operating Area (AOA) driving privileges will be permitted unescorted access to Pad-1. Vehicle crossings at Taxiway K will be performed as follows:

a. The vehicle operator shall stop short of Taxiway K at the marked hold position in order to monitor aircraft traffic on the taxiways.

b. The vehicle operator shall give way to all aircraft prior to proceeding across Taxiway K at the vehicle operator's discretion.

c. When crossing Taxiway K, the vehicle operator shall only operate the vehicle inside of the painted vehicle service road that crosses the taxiway.

d. Alternate access routes to these locations must first be approved by Airport Operations and coordinated with the FAA.

Pad-1 and Pad-2 movement areas are controlled by AeroMag during deicing months. Radio contact and approval through AeroMag controllers must be made before entering the movement area.

2.1.2 Approved Winter Anti-icing / De-icing Locations

The following anti-icing / de-icing locations shall be adhered to during Winter Deicing Activities (Figure 2.2).

1) Aircraft Design Groups III, IV, and V
    a) Primary deicing for large and wide-body aircraft will be performed at the large Pad-1 of the CDF.
    b) Secondary deicing, when required, will also be performed at Pad-1 of the CDF.
    c) Each individual airline must execute an Agreement with the CDF Operator that addresses airline specific procedures.
2) Aircraft Design Groups I and II
    a) Deicing of Design Groups I and II will be performed on either Pad-1 or Pad-2 of the CDF. Deicing on Pad-2 must be coordinated with DPC Environmental Services prior to commencement to ensure the pad is configured properly for collection.
3) Exceptions

    All aircraft are expected to use appropriate pad(s) for de-icing. The following exceptions are noted:
    a) Indoor hangar deicing where drainage is directed to a sanitary sewer system.

b) Type IV anti-icing when less than 10 gallons is utilized per aircraft per occurrence.

c) **Atlantic Aviation**: general aircraft (Design Group I or II) will be permitted to anti-ice / deice on the FBO apron. Large aircraft at Atlantic Aviation are required to conduct anti-icing / deicing at Pad-1. The Collection Contractor shall be notified prior to deicing activities occurring.

d) **UPS:** deicing activities (all design groups) may be performed on the UPS ramp. Activities will be limited to UPS aircraft and contract airlines affiliated with UPS operations. The Collection Contractor shall be notified prior to deicing activities occurring.

e) **FedEx:** small prop aircraft (Design Group I) are permitted to conduct anti-icing / deicing at the ramp prior to take off. Maximum allowable application of deicing fluid per aircraft on the ramp shall not exceed 50 gallons. The Collection Contractor shall be notified prior to deicing activities occurring.

f) **JETS, Key Corp., and Parker Hannifin:** limited general aviation aircraft (Design Group I or II) de-icing activities are permitted on the ramps adjacent to the respective hangars. The Collection Contractor shall be notified prior to deicing activities occurring.

4) Secondary Deicing and Delays

a) Should secondary deicing be required, aircraft will be routed back to the deicing pads by FAA Air Traffic Control (ATC) and upon completion of secondary deicing, will be routed to the most applicable runway for departure.

b) If take off delays are anticipated, a gate hold procedure will be coordinated with FAA ATC. This procedure will be implemented to keep secondary deicing to a minimum. Every effort will be made to keep the departure queue to not more than six (6) aircraft.

2.2 Standard Procedures

Standard Procedures indicated in this section as well as Gate Procedures identified in Section 2.3 shall adhere to the associated text with clarification from the flowchart indicated as Figure 2.3. The Centralized Deicing Facility Aircraft Movement Plan and associated figures clarifying aircraft movement from the gate to Pad-1 and Pad-2 can be referenced in Attachment A.

2.2.1 Pre Anti-icing / De-icing

a. The applicator/operator will be notified by the airlines/tenants of anticipated Pad-1 and/or Pad-2 utilization. The applicator will be responsible for notifying the FAA, Airport Operations, and the Collection Contractor as applicable and prior to commencement of anti-icing / deicing activities. The applicator will document:

    1) Time
    2) Pad being opened
    3) Airline/Tenant contact, name and telephone number

b. At Pad-1 and/or Pad-2, the Collection Contractor will position the appropriate valves to divert flow to containment and ensure that all necessary pumps are operating. Immediately after being notified, the Collection Contractor will notify DPC Environmental Services.

DPC Environmental Services contact:

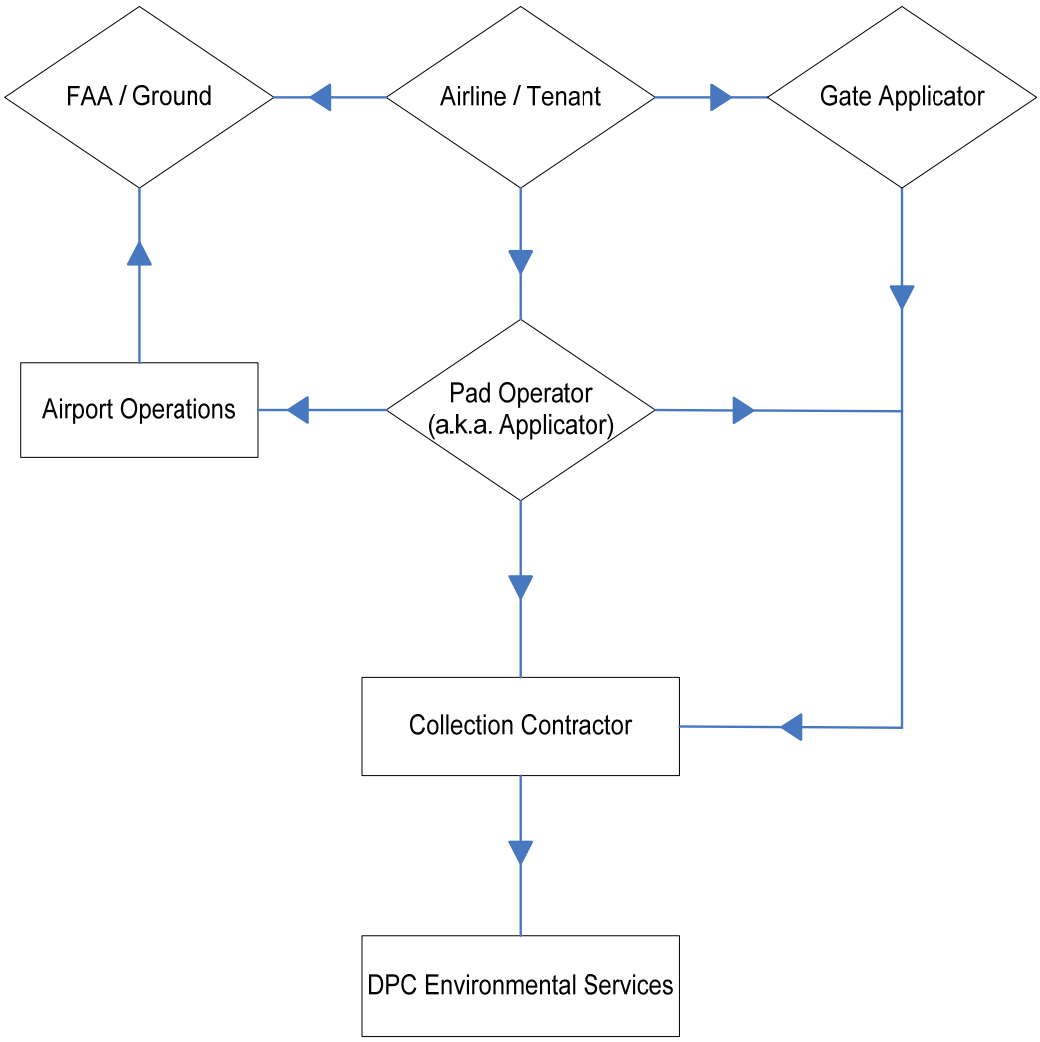
Kim McGreal	(216) 857-6867 (cell)
	(216) 265-6615 (office)
Beau Williams	(216) 857-7036 (cell)
	(216) 265-6009 (office)
Mike Reilly	(216) 857-7587 (cell)
	(216) 265-4901 (office)
Amy Wakefield	(216) 857-1217 (cell)
	(216) 265-6004 (office)

2.2.2 Post Anti-icing / De-icing

a. At the conclusion of the day's deicing activities, as appropriate, the applicator will notify the Collection Contractor and document the following:

1) The name of the applicator making the call;
2) The weather and or airline/tenant situation; and
3) The time and location of the last aircraft that was deiced.

Figure 2.3 Pre Anti-icing / De-icing Flowchart



2.2.2 Post Anti-icing / De-icing (con't)

b. At Pad-1, Pad-2, and WCR

1) Upon approval and direction of DPC Environmental Services, the collection contractor may divert the collection system from fluid collection back to storm water system discharge typically occurring in May or June.
2) Applicator must ensure NO test spraying of fluid discharge or leaks occur after opening to storm water system discharge.
3) The Collection Contractor must confirm these actions with the applicator, Airport Operations and DPC Environmental Services prior to conducting this activity.

2.3 Gate Procedures

Under specific conditions application of de-icing or anti-icing fluids can be performed at the aircraft gates.

2.3.1 Allowable Circumstances

Application of anti-icing / deicing fluid to aircraft on the ramp in areas other than Pad-1 or Pad-2 is restricted to compliance with the Ohio EPA NPDES permit for CLE. The maximum allowable application of deicing fluid per aircraft on the ramp shall not exceed 150 gallons for Group IV and V, and 100 gallons for Group III or smaller. The Applicator will make every effort to minimize or eliminate the need for fluid (e.g. compressed or heated air).

Application of anti-icing and de-icing fluids may occur in the ramp area not associated with Pad-1 and/or Pad-2 ***only*** under one or more of the following circumstances:

a. **Defrosting:** Defrosting is defined as the limited application of deicing fluids to an aircraft during dry weather, to remove minor accumulations of ice crystals that may have appeared in the absence of atmospheric precipitation. When pre-taxi inspection of an airplane during above-freezing ambient temperatures reveals the build-up of clear ice on critical components of the aircraft, including, but not limited to the windshield and inlet ducts, such that the FAA regulations require the defrosting or de-icing of those components before the aircraft may be taxied to the de-icing pad for complete defrosting or de-icing , then de-icing fluid may be applied to the

aircraft in order to comply with FAA regulations before leaving the gate or ramp.

b. **Specific aircraft surfaces:** When the pre-flight inspection reveals the presence of ice or snow on critical components of the aircraft including but not limited to the taxi-gear or engine intake ducts, such that FAA regulations require deicing of those surfaces before the aircraft can be taxied to the deice pad, deicing fluid may be applied to those surfaces in order to comply with FAA regulations only before taxiing to the deicing pad.

c. **Weight Reduction:** When the pre-flight inspection reveals a heavy accumulation of ice or snow on the aircraft, the aircraft may exceed the maximum structural weight permitted by FAA regulations. Other methods, such as physical measures or hot-compressed air, shall be exhausted prior to limited use of deicing fluid being applied in order to bring the aircraft under the maximum taxi weight permitted by the FAA. The aircraft will then be taxied to the deicing pad for removal of the remaining ice or snow.

d. **Anti-icing:** For aircraft remaining at the gate or ramp overnight, or for cargo aircraft remaining on the ramp for an extended period during the day, anti-icing fluid (Type IV) may be applied if **all** of the following conditions are met:

1) Anti-icing fluid cannot be applied at the de-icing pad because no pilot or other authorized personnel are available to take the aircraft to the de-icing pad; and
2) Overnight accumulation of ice, snow or frost on critical components for the aircraft including, but not limited to, the windshield and engine inlet ducts or anticipates the same type of accumulation during the day on a cargo aircraft; and
3) The application of anti-icing fluid (Type IV) at the gate or ramp will reduce the necessity for later application of de-icing fluid (Type I) at the gate or ramp in order to comply with FAA requirements before taxiing to the de-icing pad for complete de-icing.

2.3.2 Procedures

Procedures for gate anti-icing / de-icing activities are as follows:

a. Prior to commencing of gate activities, the operator shall notify DPC Environmental Services and Collection Contractor to ensure stormwater drain valves are closed and collection equipment available and/or standing by and document the following:

   1) The name of the airline,
   2) The name of the applicator (if other than the airline),
   3) The name of the person making the report and phone number,
   4) The time and gate/area at which the aircraft is to be de-iced/ anti-iced
   5) Proper justification (identified as circumstance “a” through “d” in Section 2.3.1) and whether or not the aircraft has been on the ramp overnight.

b. DPC Environmental Services will conduct regular monitoring of anti-icing and deicing activities.

c. All airlines and/or applicators, shall keep a Gate Anti-icing / De-icing Log (Attachment C), which shall include for each aircraft treated, a record of:

   1) The date, time, temperature
   2) The name of the airline
   3) The name and contact number of the applicator
   4) The aircraft type
   5) The gate number
   6) The type, concentration, and amount of fluid used
   7) Whether or not the aircraft has been on the ramp overnight
   8) Circumstance, as approved herein, justifying the activity and subsequent acknowledgement by DPC Environmental Services.

d. When anti-icing / deicing activities are performed at Pad-1 and/or Pad-2, applicators shall keep an Anti-icing / De-icing Log (Attachment D) which shall include a record of:

   1) The date, time, temperature and weather condition
   2) The name of the airline
   3) The aircraft type
   4) The type, concentration, and amount of fluid used.

2.3.3 Post Gate Procedures

- All Ground Service Equipment (GSE) must be moved as close as possible to the terminal buildings after deicing operations have concluded so as to assist the Collection Contractor with sweeping the areas.
- GSE involved with anti-icing or de-icing operations shall NOT park over open drains.
- Airlines/tenants shall work with DPC Environmental Services and the Collection Contractor to optimize the timing of collection efforts on all ramp areas not associated with Pad-1 or Pad-2.

2.4 Pavement Deicing Protocol

Despite changes in CLE standard deicing procedures in 2001 to employ more innocuous deicing agents (propylene glycol (PG) instead of ethylene glycol, and sodium formate (SF) and potassium acetate (PA) replacing urea), water quality in Abram Creek, though improving, continues to be impaired as evidenced by periodic nuisance growths of biofilm. CLE uses organic based deicers that are generally considered to have a lower environmental impact compared to road salt/sodium chloride (NaCl) based road salt and especially as compared to urea, the standard runway deicing agent used historically. As with any anthropogenic activity there is an environmental impact. The results illustrate the complexity of both the management of airfield storm water and the growth of biofilms. Biofilms are ubiquitous; however, it appears that biofilms related to CLE deicers digest simple sugars and acids (e.g. yeast and bacteria consuming PG, PA, and SF).

2.4.1 Pavement Reporting Procedures

All DPC, airlines and/or applicators, shall keep a Pavement De-icing Log (Attachment C), which shall include for each aircraft treated, a record of:

1) The date, time, temperature
2) The name and contact number of the applicator
3) The area of pavement being deiced
    a. Airside: Gate numbers, hangar ramp locations,
    b. Landside: parking lots etc.

4) The type and amount of chemical used.

2.4.2 Pavement Deicing Storage and Disposal

The CLE NPDES industrial storm water permit prohibits storm water exposure to storage of salts and deicers. Approved pavement deicers at CLE include but not limited to sodium formate (SF), sodium acetate (SA), potassium formate (PF), and potassium acetate (PA) for airside applications and road salt for landside applications (see Section 6.0). Users of deicers need to limit the application to the amount needed to clear pavement. Deicer storage or piles containing deicers (excluding snow melt): materials used for deicing shall be enclosed or covered and appropriate measures shall be implemented to minimize storm water exposure from adding to or removing deicing materials. Storage containers, applicators, trucks, etc. cannot be left outside without measures to prevent storm water exposure such as covering the container, applicator, truck bed and load; this also reduces waste related to water damaged deicers. Liquid deicer trucks need to be inspected during shifts to ensure sprayers are not leaking or stuck in the open position. If leaking, measures to collect the spilled material are used or the vehicle is stored inside a building with floor drains that are connected to sanitary systems.

Locations of deicer storage shall be documented. Please email Environmental Services (DPC-Environmental@clevelandairport.com) with storage locations and types of deicer.

Spilled or excessively applied deicers need to be cleaned up and disposed of properly to prevent runoff to storm sewer systems. Users of deicers should sweep after deicing events to remove excess deicers that may runoff to storm water systems. Water damaged deicers such as clumped SF from the back of trucks and spilled materials should be used onsite in areas that off-spec product is acceptable for use such as the perimeter roads. SF that cannot be used must be promptly placed in a dumpster for offsite disposal. Outdoor storage is **prohibited**. For CLE personnel, the former SF storage

building and batch plant areas are not suitable for storing unusable SF for future disposal. When SF or salt are unusable they are considered solid waste. Mixing solid wastes with non-solid waste materials, like soil, will make the non-solid waste materials into solid waste thus increasing the quantity, cost, and complexity for disposal. Snow and ice contaminated with aircraft deicers (i.e. propylene glycol) should be kept and melted on the deicing pad as much as possible. This is primarily snow removal activities around application areas, spills, and other contamination not recovered through the Spent Aircraft Deicing Fluid recovery program.

Users of deicers are encouraged to consider options for using off-spec deicers such as brine makers that can use off-spec deicers to make brine that can be used for pretreatment of pavements or grinders to breakup clumped deicers for use in non-critical areas. Users are also encouraged to consider computerized deicer applicators for trucks that base application rates on real-time weather and pavement conditions. Some existing users have realized over application rates of deicers greater than 100%.

3.0 SPENT FLUID COLLECTION AND DISCHARGE

During defrosting events, the gate Applicator/Operator shall provide to the Collection Contractor specific locations of gate activity. The Collection Contractor will clean such locations using glycol recovery vehicles (GRVs). The Collection Contractor is to be notified prior to these events to control drains and fluids. The Collection Contractor shall coordinate all GRV use with the tenants of the respective gate and ramp areas (Section 2.3.2). Drain inserts on the ramp will be closed during winter deicing operations by DPC or AeroMag.

Recycling of collected spent anti-icing / de-icing fluids is encouraged by DPC and required by the Administrative Order with NEORSD. The Collection Contractor is responsible for appropriate discharge of collected spent anti-icing / de-icing fluids, whether it be to: the NEORSD, fluid destruction (through an approved waste collector), or to a vendor and the storm sewer system through recycling methodologies. Discharge of collected spent anti-icing / de-icing fluids shall be conducted in accordance with all permits and regulations.

3.1 Pre Anti-icing / De-icing

Prior to the start of deicing operations, the glycol collection tank selection valve system shall be opened solely to collection. The Collection Contractor will ensure that valves at each location are in the appropriate open position, for collection, and closed to the storm sewer system.

3.1.1 Collection Contractor Responsibilities

a. Verify that appropriate valve(s) are in the proper position; **or** verify that any pumps necessary for the operation of the spent fluid collection system are on and operational;
b. Visually inspect the containment tank(s) to verify that sufficient capacity is available, i.e. that the fluid in the tanks is at less than the Significant Storm Surge Protection (SSSP) levels for each tank;
c. If a tank has exceeded the SSSP level the Collection Contractor will notify DPC Environmental Services for contingency plan instructions;
d. Keep a log of the date and time for completion of “a” through “c”; and

e. Report to DPC Environmental Services verbally on a daily basis, as well as through written weekly status updates.

3.2 Post Anti-icing / De-icing

The Collection Contractor may coordinate with the applicator at Pad-1 and Pad-2 to clean the pads using its GRVs at times when operations on the pads will not be affected. Priority GRV activities will be as follows:

(1) Gate / ramp clean-up
(2) Pad-1
(3) Pad-2

4.0 ENFORCEMENT PROGRAM

Efficient pad operations require cooperation and communication between DPC and airlines/ tenants. Anti-icing / de-icing may occur only in designated areas of the Airport as identified in this Plan. DPC will monitor and enforce anti-icing and de-icing operations as well as the data reporting requirements stated within this Plan. Fines shall reimburse for response to offending party. The following infractions shall be documented and implemented through the Deicing Infraction Ticket and Dispute Resolution Policy stated herein.

4.1 Deicing Infraction Ticket

If Airport Operations is unable to verify that de-icing or anti-icing and recovery are being conducted in accordance with this Plan or if flagrant violations of this Plan are observed by any party:

a. DPC Airport Operations shall immediately notify one of the following:

Call Sequence	Cell/Office
1) 24-hour response AeroMag	216-375-0044
2) Kim McGreal, Environmental Manager	216-857-6867 /216-265-6615
3) Zachary Randall, Operations Manager	216-857-5612 / 216-265-6791
4) Bryant Francis, Director of Airports	216-265-6022

b. DPC Airport Operations shall record the incident and notification in its log, including:

1) The Airline/tenant involved;
2) All of the individuals witnessing or involved in the event;
3) Time, location, and circumstances of the event; and
4) Notifications made.

c. A CLE representative shall meet with the Airline/tenant involved to discuss and resolve the situation. As necessary, a Deicing Infraction Ticket will be issued (Attachment B).

4.1.1 Infraction Ticket Guidelines

Minor Infractions (not reaching the storm drain system):

Level A. First Time Occurrence = Deicing Infraction Ticket

Level B. Repeat Occurrences = $2,000.00 Fine

a. The incident will be recorded,
b. The Collection Contractor will be mobilized for spill recovery,
c. The tenant supervisor will be notified of spill recovery, and will subsequently be responsible for funding response for the event,
d. Violations noted will be written and reported to tenant Corporate management, and
e. Ohio EPA fines realized for every violation of the NPDES permit will be the responsibility of the tenant.

Major Infractions (reaching storm drain system) and Repeat Occurrences:

Level C. First and Repeat Occurrences = $5,000.00 Fine

a. The incident will be recorded,
b. The Collection Contractor will be mobilized for spill response,
c. The tenant supervisor will be notified of spill response, and will subsequently be responsible for reimbursing cost to respond,
d. Ohio EPA will be notified of the spill,
e. Violations noted will be written and reported to tenant Corporate management, and

f. Ohio EPA fines realized for every violation of the NPDES permit will be the responsibility of the tenant.

4.2 Penalties and Disclaimer

DPC has developed the Plan to serve as an approved CLE policy for DPC staff, airlines/ tenants, and contractors. Since Airline/ tenants are strictly liable for complying with the Plan during anti-icing / de-icing conditions, and the Ohio EPA along with the DPC enforces such regulations, all parties are encouraged to adhere to the Plan.

The Director and/or the Commissioner of CLE has the authority to immediately suspend any anti-icing / de-icing activity or operation that is in violation of the procedures and practices established by this Plan and all applicable Federal, State and local governing regulatory agencies. The suspension will continue until project modifications are made to address the Plan concern as well as a written work continuation letter is issued by the DPC Environmental Services Office to the Airline/tenant.

This Plan has been adopted by DPC pursuant to *Section 10.01* of the Master Lease and all requirements will be enforced based on the rules and regulations set forth therein.

5.0 SAFETY

Safety is the only factor that will necessitate the release or discharge of spent deicing fluids to the storm sewer system.

DPC is committed to assuring that the spent anti-icing / de-icing fluid recovery procedures do not present a risk to the safety of individuals or aircraft operating on ramps or pads. Pursuant to the Federal Aviation Administration, Advisory Circular AC 150/5200-30D, Airport Field Condition Assessments and Winter Operations (or most current version), pavement contaminants including snow, ice and slush should be removed as expeditiously as possible to maintain movement areas in a “no worse than wet” condition.

In the event that DPC is advised that a potential hazard or threat to safety condition exists on the aircraft aprons or deicing pads, which is the result of ponded deicing fluids

or an equipment failure on the deicing pad, DPC may be required to release or discharge fluids to the storm sewers.

Prior to any release or discharge of fluids the Collection Contractor will make every effort to correct the potential hazard. If the condition cannot be corrected, the DPC Environmental Services Manager, in concert with the Airport Operations supervisor on duty will contact the CLE Commissioner for authorization to open the appropriate inserts or valves in order to eliminate the condition.

DPC Environmental Services will be provided with all the relevant information regarding the reason for the release of fluids, the estimated amount released, estimated percent concentration of spent fluids, the location, time and weather will also be documented. The DPC Environmental Services Manager will then notify Ohio EPA of the release and provide the information listed above. All information will be documented and provided to the appropriate officials.

6.0 CHEMICAL APPROVAL

6.1 Permitted Chemicals

Chemicals authorized for anti-icing and/or de-icing use at CLE are limited to:

- Propylene glycol Type IV and Type I (aircraft anti-ice / de-ice)
- Potassium acetate (pavements)
- Potassium formate (pavements)
- Sodium formate (pavements)
- Sodium acetate (pavements)
- Chlorides (i.e. calcium, magnesium, sodium, potassium, etc.) (***landside pavements only***)

Additional deicing chemicals can be proposed to DPC and will be evaluated on an individual basis; approval times may include Ohio EPA notification and acceptance which will extend timeframes a minimum of 45-days. See Section 7.0 of this plan for recordkeeping and reporting requirements.

6.2 Prohibited Chemicals

The following chemicals are **NOT PERMITTED** for use on airfield pavement at CLE under any circumstance:

- Urea
- Ethylene Glycol
- All Chlorides (i.e. Calcium, Magnesium, Sodium, Potassium etc.)

If any prohibited chemical is discovered being utilized the substance will be considered a chemical hazard requiring full and complete spill response.

a. Tenants will be responsible for spill response, removal of all remaining prohibited chemicals (urea, ethylene glycol, calcium chloride) from CLE property (including soil and sewers), and submitting a certified acknowledgement that no further prohibited chemicals will be used or stored at CLE.

b. Monetary fines or sanctions levied by the NEORSD and/or the Ohio EPA resulting from use of prohibited chemicals will be the responsibility of the violating tenant.

7.0 RECORDKEEPING AND REPORTING

7.1 Record Keeping

a. Tenants and Operators will record data concerning application of anti-icing / de-icing fluids as described within this Plan. It is the responsibility of the tenant and/or operator to maintain records as needed for their contracting purposes.

b. DPC will maintain documents reported by tenants and operators in the DPC Environmental Services office.

c. DPC will maintain all documentation involving communication, infractions, outfall monitoring, or other pertinent information in the DPC Environmental Services office.

7.2 Reporting

a. No later than forty-eight (48) hours after deicing, the operator, airport maintenance, and each tenant, as applicable, shall email to DPC Environmental Services (DPC-Environmental@clevelandairport.com) a copy of its Deicing Activities Report using the forms designated by CLE.

b. Copies of CLE Deicing Pad Logs and associated inspection reports by the applicator shall be submitted to DPC Environmental Services monthly.

c. The Collection Contractor will record data regarding the CDF valve management, collection of all spent fluids (at pads and gate areas) and appropriate discharge of all spent fluids as described within this Plan.

Attachment A **CDF Aircraft Movement Plan**

1. **PAD DESCRIPTION**: The Centralized Deicing Facility (CDF) is comprised of two pads identified as Pad-1 and Pad-2 as shown in Figure-1 below. Deice Pad-1 is the primary pad, and has the capacity to operate up to six Group-3 aircraft bays simultaneously. Directly behind each of the deice positions is a secondary position that is used for aircraft queuing. Deice Pad-2 is a small Group-2 aircraft pad with access off of Taxiway Z, and has a single bay with queue space for 1-2 additional aircraft. Approval from DPC Environmental Services is required prior to Pad-2 use to ensure proper configuration.

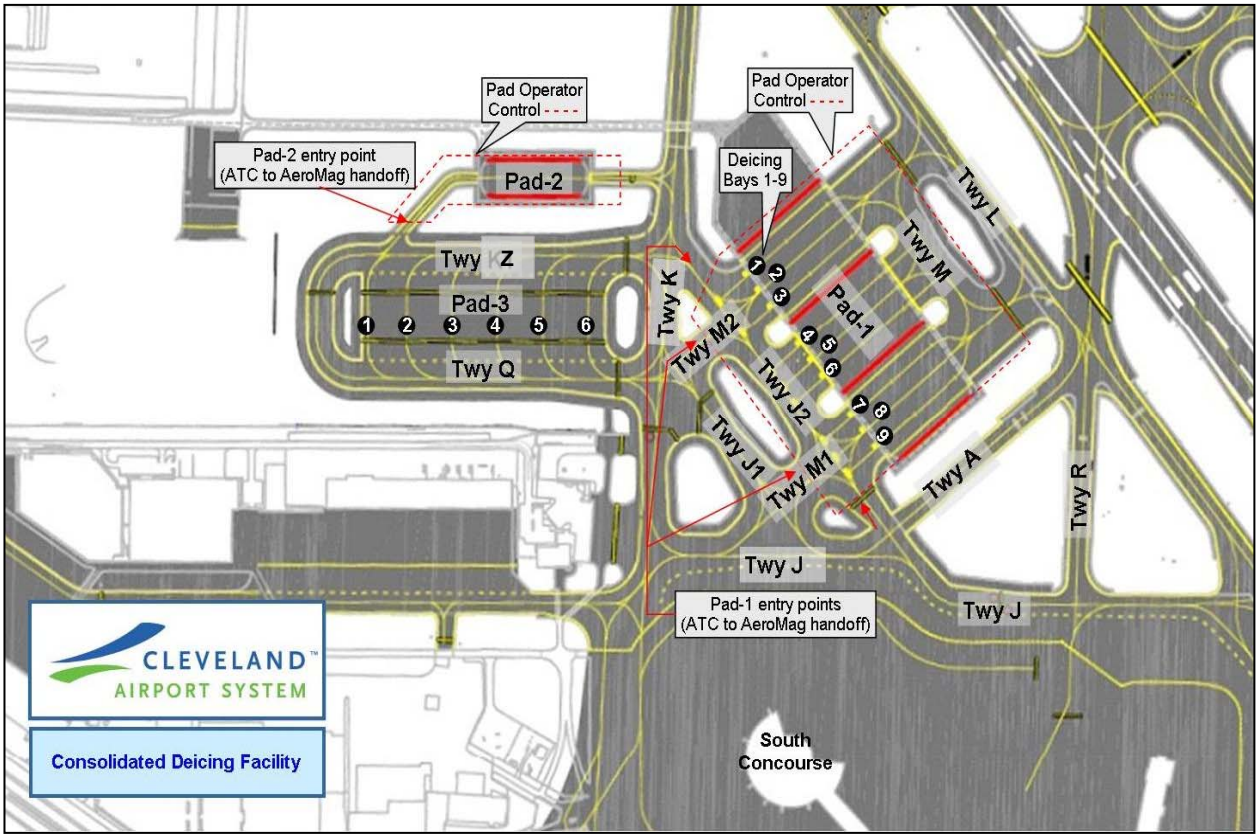


Figure A-1

2. **PROCEDURES**

   a. The deice season is defined as the period beginning October 15th and ending April 15th,weather dependent.

   b. The following frequencies have been assigned for use by the CDF operator, AeroMag-CLE, in deicing operations as indicated:

      (1) 128.975 for aircraft movement control, call sign "AeroMag"

      (2) 130.975 for deicing operation coordination, call sign "Iceman"

   c. CLE Airport Operations shall close the following taxiways by NOTAM during deice season to support the deicing operation:

      (1) Taxiway "J2"

      (2) Taxiway "M"

(3) Taxiways “M1” and “M2” between Taxiway “J2” and Taxiway “L”

The closed taxiway areas are enclosed by the red border around Pad-1 in Figure-1 above.

d. AeroMag - CLE will control the movement of aircraft on Pad-1 and Pad-2, and on the closed portions of the taxiways identified in 2.b. above, and shown in Figure-1 above as the areas inside the red borders.

e. Handoff points between the CLE ATCT and AeroMag - CLE for aircraft entering Pad-1 shall be at Taxiway “J2” or Taxiway “M1” or “M2” crossing Taxiway “J2.” CLE ATCT shall change aircraft to AeroMag - CLE on frequency 128.975 prior to the handoff points.

f. The handoff point between the CLE ATCT and AeroMag - CLE for aircraft entering Pad-2 shall be the entry to Pad-2 off of Taxiway “K1.” CLE ATCT shall change aircraft to AeroMag - CLE on frequency 128.975 prior to the handoff point.

g. All aircraft requiring deicing at the CDF shall coordinate with AeroMag - CLE prior to making initial contact with ATC for taxi.

3. PAD-1 USE AND CONFIGURATION

a. Deice Pad-1 shall be used as the primary deice pad. Pad-1: Bays 1, 3, 4, 5, 6, 7, and 9 are restricted to Group-3 aircraft (wingspan less than 118’)

b. When Deice Pad-1 is full, additional aircraft queuing will be conducted using Taxiway Q and Taxiway K1 and Pad-3.

c. AeroMag - CLE will notify CLE Airport Operations when the Pad-1 queue space is full. CLE Airport Operations will then notify CLE ATCT the queue configuration is in effect.

d. AeroMag - CLE will notify CLE Airport Operations when they determine that the Pad-1 queue space can again handle the deicing operation queuing needs. CLE Airport Operations will then notify CLE ATCT that Pad-1 queuing is available.

e. When deicing is complete, AeroMag - CLE shall instruct all aircraft to hold short of Taxiway “L” and contact ground control.

4. PAD-2 USE AND CONFIGURATION

a. Pad-2 can accommodate Group-2 aircraft Pad (wingspan less than 79’) with access off of Taxiway “Z.” Group 2 aircraft are required to receive prior approval from AeroMag - CLE in order to use Pad-2. Any Group 2 aircraft receiving authorization for Pad-2 shall advise ground control on initial contact. Use of Pad-2 requires prior coordination with DPC Environmental Services to ensure proper configuration of valves.

b. When deicing is complete all aircraft shall be instructed to hold short of Taxiway “K” and contact ground control.

Attachment B

No._____

Deicing Infraction Ticket

The Department of Port Control witnessed a(n) _____aircraft being anti-iced or de-iced by _____at _____ (an unapproved deicing location) on _____, 20__.

This infraction was a Minor / Major infraction and a First / Repeat occurrence for this tenant at this location.

The Aircraft Anti-icing / De-icing and Discharge Management Plan (Plan) clearly identifies all approved and unapproved deicing locations. Per Section 4.0 Enforcement Program in the Plan, the party receiving this ticket is issued an:

Infraction Level A = Deicing Infraction Ticket

Infraction Level B = $2,000.00 fine*

Infraction Level C = $5,000.00 fine*

Payable to the Department of Port Control.

*Infraction Level B and Level C may have additional fines as levied by the Ohio Environmental Protection Agency.

This Deicing Infraction Ticket is issued per the authority of the Department of Port Control.

Bryant Francis, Director of Airports
Department of Port Control

For questions or issues concerning this ticket, please contact Kim McGreal, DPC Environmental Services Manager at 265-6615.

Dispute Resolution Policy

Upon receipt of a Deicing Infraction Ticket, the ticketed party may appeal the ticket by filing a written response identifying justification of the appeal.

This appeal must be submitted within 72 hours of receipt.

Appeals should be addressed to:

Kim McGreal, DPC Environmental Services Manager
5300 Riverside Drive
P.O. Box 81009
Cleveland, OH 44181-0009
(216) 265-6185 (fax)
Or electronically at kmcgreal@clevelandairport.com

The circumstances of the appeal will be evaluated by DPC. DPC may request evidence or convene a fact-finding hearing if deemed appropriate. At the conclusion of the appeal process, the DPC's determination will be final and a written response will be returned to the ticketed party.

For questions or issues concerning this ticket, please contact Kim McGreal, DPC Environmental Service Manager at 265-6615.

Attachment C

Cleveland Hopkins International Airport - Department of Port Control

Daily Anti-icing/Deicing and Pavement Chemical Tracking Form

Reporting Date: _____

Reporting Applicator (Airline/Tenant):_____

Contact Person Name:_____

Contact Phone Number:_____

AIRCRAFT Chemical Usage

Deicing Area	Aircraft Type Deiced (e.g., 737)	Propylene Type I Deicing Fluid Dispensed	Propylene Type IV Deicing Fluid Dispensed	Remarks/ Comments (e.g., concentration 50/50 or RON)
Total				

Justification:

Circumstances in addition to Justification (if any):

PAVEMENT Chemical Usage

Airside

Location Chemical Applied= _____ (e.g., Ramp at Gates X, Y, and Z)

Type of Chemical Applied= _____ (e.g., potassium acetate, sodium formate)

Quantity Applied (lbs.) = _____

Landside

Location Chemical Applied=_____ (e.g., parking lot)

Type of Chemical Applied= _____ (e.g., salt)

Quantity Applied (lbs.) = _____

Email form to DPC-Environmental@clevelandairport.com by 8:00am the following day

Please report information **ONLY** when deicing and/or pavement chemical usage has occurred.

For questions please contact: Kim McGreal at (216) 265-6615

SWPPP APPENDICES

Appendix A: Significant Spills, Leaks, or Other Releases

Appendix B: Employee Training

Appendix C: Routine Facility Inspection Form

Appendix D: Quarterly Visual Assessment Reports

Appendix E: Comprehensive Annual Inspection Report

Appendix F: SWPPP Amendment Log

APPENDIX A: SIGNIFICANT SPILLS, LEAKS, OR OTHER RELEASES

Year ____Spills, Leaks or Other Release Log					
Date	**Location of Spill**	**Type/Quantity of Material**	**Outfall Affected**	**What Happened?**	**Corrective Action to Prevent Reoccurrence**

APPENDIX B: EMPLOYEE TRAINING

Training Attendance Sheet Cleveland Hopkins International Airport (CLE) - Cleveland, Ohio		
DATE	**NAME (print)**	**SIGNATURE**

APPENDIX C: ROUTINE FACILITY INSPECTION FORM

Routine Facility Inspection Report

General Information			
Facility Name	CLE		
Ohio EPA Facility Permit No.	3II00179*FD		
Date of Inspection	Insert Date	**Start/End Time**	Insert Start/End Time
Inspector's Name(s)	Insert Name		
Inspector's Title(s)	Insert Title		
Inspector's Contact Information	Insert Contact Info		
Inspector's Qualifications	Insert qualifications or add reference to the SWPPP		

Weather Information

Weather at time of this inspection?

❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snow ❑ High Winds

❑ Other: Temperature:

Have any previously unidentified discharges of pollutants occurred since the last inspection? ❑Yes ❑No

If yes, describe: Describe

Are there any discharges occurring at the time of inspection? ❑Yes ❑No

If yes, describe: Describe

Control Measures

- *Number the structural stormwater control measures identified in your SWPPP on your site map and list them below (add as many control measures as are implemented on-site). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required control measures at your facility.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	Structural Control Measure	**Control Measure is Operating Effectively?**	**If No, In Need of Maintenance, Repair, or Replacement?**	**Corrective Action Needed and Notes** (identify needed maintenance and repairs, or any failed control measures that need replacement)
1	Insert Control Measure Name	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	Describe Corrective Actions
2	Insert Control Measure Name	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	Describe Corrective Actions
3	Insert Control Measure Name	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	Describe Corrective Actions
4	Insert Control Measure Name	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	Describe Corrective Actions
5	Insert Control Measure Name	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	Describe Corrective Actions
6	Insert Control Measure Name	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	Describe Corrective Actions
7	Insert Control Measure Name	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	Describe Corrective Actions
8	Insert Control Measure Name	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	Describe Corrective Actions

	Structural Control Measure	Control Measure is Operating Effectively?	If No, In Need of Maintenance, Repair, or Replacement?	Corrective Action Needed and Notes (identify needed maintenance and repairs, or any failed control measures that need replacement)
9	Insert Control Measure Name	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	Describe Corrective Actions
10	Insert Control Measure Name	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	Describe Corrective Actions

Areas of Industrial Materials or Activities exposed to stormwater

Below are some general areas that should be assessed during routine inspections. Customize this list as needed for the specific types of industrial materials or activities at your facility.

	Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes
1	**Material loading/unloading and storage areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	Describe Corrective Actions
2	**Equipment operations and maintenance areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	Describe Corrective Actions
3	**Fueling areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	Describe Corrective Actions
4	**Outdoor vehicle and equipment washing areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	Describe Corrective Actions
5	**Waste handling and disposal areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	Describe Corrective Actions

	Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes
6	**Erodible areas/construction**	❑Yes ❑No ❑ N/A	❑Yes ❑No	Describe Corrective Actions
7	**Non-stormwater/ illicit connections**	❑Yes ❑No ❑ N/A	❑Yes ❑No	Describe Corrective Actions
8	**Salt storage piles or pile containing salt**	❑Yes ❑No ❑ N/A	❑Yes ❑No	Describe Corrective Actions
9	**Dust generation and vehicle tracking**	❑Yes ❑No ❑ N/A	❑Yes ❑No	Describe Corrective Actions
10	**(Other)**	❑Yes ❑No ❑ N/A	❑Yes ❑No	Describe Corrective Actions
11	**(Other)**	❑Yes ❑No ❑ N/A	❑Yes ❑No	Describe Corrective Actions
12	**(Other)**	❑Yes ❑No ❑ N/A	❑Yes ❑No	Describe Corrective Actions

Non-Compliance

Describe any incidents of non-compliance observed and not described above:

Describe Non-compliance

Additional Control Measures

Describe any additional control measures needed to comply with the permit requirements:

Describe Additional Controls Needed

Notes

Use this space for any additional notes or observations from the inspection:

Additional Notes

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print Name and Title: _____

Signature: _____ **Date:** _____

APPENDIX D: QUARTERLY VISUAL ASSESSMENT REPORTS

MSGP Quarterly Visual Assessment Form

(Complete a separate form for each outfall you assess)

Name of Facility: CLE

Ohio EPA Facility Permit No. 3II00179*FD

Outfall Name: Name "Substantially Identical Outfall"? ☐ No ☐ Yes (identify substantially identical outfalls):

Person(s)/Title(s) collecting sample: Name/Title

Person(s)/Title(s) examining sample: Name/Title

Date & Time Discharge Began: Enter date and time

Date & Time Sample Collected: Enter date and time

Date & Time Sample Examined: Enter date and time

Substitute Sample? ☐ No ☐ Yes (identify quarter/year when sample was originally scheduled to be collected):

Nature of Discharge: ☐ Rainfall ☐ Snowmelt

If rainfall: Rainfall Amount: No of inches inches

Previous Storm Ended > 72 hours Before Start of This Storm? ☐ Yes ☐ No* (explain):

Parameter

Color ☐ None ☐ Other (describe):

Odor ☐ None ☐ Musty ☐ Sewage ☐ Sulfur ☐ Sour ☐ Petroleum/Gas _____
☐ Solvents ☐ Other (describe):

Clarity ☐ Clear ☐ Slightly Cloudy ☐ Cloudy ☐ Opaque ☐ Other

Floating Solids ☐ No ☐ Yes (describe):

Settled Solids** ☐ No ☐ Yes (describe):

Suspended Solids ☐ No ☐ Yes (describe):

Foam (gently shake sample) ☐ No ☐ Yes (describe):

Oil Sheen ☐ None ☐ Flecks ☐ Globs ☐ Sheen ☐ Slick
☐ Other (describe):

Other Obvious Indicators of Stormwater Pollution ☐ No ☐ Yes (describe):

* The 72-hour interval can be waived when the previous storm did not yield a measurable discharge or if you are able to document (attach applicable documentation) that less than a 72-hour interval is representative of local storm events during the sampling period.

** Observe for settled solids after allowing the sample to sit for approximately one-half hour.

Detail any concerns, additional comments, descriptions of pictures taken, and any corrective actions taken below (attach additional sheets as necessary). Insert details

Certification by Facility Responsible Official (Refer to MSGP Subpart 11 Appendix B for Signatory Requirements)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name:

B. Title:

C.Signature:

D. Date Signed:

APPENDIX E: COMPREHENSIVE ANNUAL SITE INSPECTION REPORT

NPDES Permit Tracking No.:

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

Annual Reporting Form

A. GENERAL INFORMATION

1. Facility Name:

2. NPDES Permit Tracking No.:

3. Facility Physical Address:

a. Street:

b. City: c. State: d. Zip Code: -

4. Lead Inspectors Name: Title:

Additional Inspectors Name(s):

5. Contact Person: Title:

Phone: - - Ext. E-mail:

6. Inspection Date: / /

B. GENERAL INSPECTION FINDINGS

1. As part of this comprehensive site inspection, did you inspect all potential pollutant sources, including areas where industrial activity may be exposed to stormwater?
☐ YES ☐ NO

If NO, describe why not:

NOTE: *Complete Section C of this form for each industrial activity area inspected and included in your SWPPP or as newly identified in B.2 or B.3 below where pollutants may be exposed to stormwater.*

2. Did this inspection identify any stormwater or non-stormwater outfalls not previously identified in your SWPPP? ☐ YES ☐ NO

If YES, for each location, describe the sources of those stormwater and non-stormwater discharges and any associated control measures in place:

NPDES Permit Tracking No.:

3. Did this inspection identify any sources of stormwater or non-stormwater discharges not previously identified in your SWPPP? ☐ YES ☐ NO

If YES, describe these sources of stormwater or non-stormwater pollutants expected to be present in these discharges, and any control measures in place:

4. Did you review stormwater monitoring data as part of this inspection to identify potential pollutant hot spots? ☐ YES ☐ NO ☐ NA, no monitoring performed

If YES, summarize the findings of that review and describe any additional inspection activities resulting from this review:

5. Describe any evidence of pollutants entering the drainage system or discharging to surface waters, and the condition of and around outfalls, including flow dissipation measures to prevent scouring:

6. Have you taken or do you plan to take any corrective actions, as specified in Part 3 of the permit, since your last annual report submission (or since you received authorization to discharge under this permit if this is your first annual report), including any corrective actions identified as a result of this annual comprehensive site inspection?

☐ YES ☐ NO

If YES, how many conditions requiring review for correction action as specified in Parts 3.1 and 3.2 were addressed by these corrective actions? ☐☐

NOTE: *Complete the attached Corrective Action Form (Section D) for each condition identified, including any conditions identified as a result of this comprehensive stormwater inspection.*

NPDES Permit Tracking No.:

C. INDUSTRIAL ACTIVITY AREA SPECIFIC FINDINGS

Complete one block for each industrial activity area where pollutants may be exposed to stormwater. Copy this page for additional industrial activity areas.

In reviewing each area, you should consider:

- Industrial materials, residue, or trash that may have or could come into contact with stormwater;
- Leaks or spills from industrial equipment, drums, tanks, and other containers;
- Offsite tracking of industrial or waste materials from areas of no exposure to exposed areas; and
- Tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas.

INDUSTRIAL ACTIVITY AREA _____:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO

3. Have any control measures failed and require replacement? ☐ YES ☐ NO

4. Are any additional/revised control measures necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

INDUSTRIAL ACTIVITY AREA _____:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO

3. Have any control measures failed and require replacement? ☐ YES ☐ NO

4. Are any additional/revised c necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

INDUSTRIAL ACTIVITY AREA _____:

Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO

3. Have any control measures failed and require replacement? ☐ YES ☐ NO

4. Are any additional/revised BMPs necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

NPDES Permit Tracking No.:

NOTE: *Copy this page and attach additional pages as necessary*

INDUSTRIAL ACTIVITY AREA _____:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO

3. Have any control measures failed and require replacement? ☐ YES ☐ NO

4. Are any additional/revised BMPs necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

INDUSTRIAL ACTIVITY AREA _____:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO

3. Have any control measures failed and require replacement? ☐ YES ☐ NO

4. Are any additional/revised BMPs necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

INDUSTRIAL ACTIVITY AREA _____:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO

3. Have any control measures failed and require replacement? ☐ YES ☐ NO

4. Are any additional/revised BMPs necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

APPENDIX F: SWPPP AMENDMENT LOG

SWPPP Amendment Log

Amend. No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]
1	Update site activity changes	09/2023	DPC
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			