



Burlington International Airport

STORMWATER MANAGEMENT PROGRAM

June, 2013

VOLUME 2: STORMWATER POLLUTION PREVENTION PLAN (SWPPP)



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Stormwater Pollution Prevention Plan
(SWPPP)
for
Burlington International Airport
South Burlington, Vermont

MSGP 3028-9003

April 1, 2012
Amended April 1, 2013

Prepared By

Stantec Consulting Services, Inc.

55 Green Mountain Drive

South Burlington, Vermont 05403



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Appendices

- Appendix A: Non-Stormwater Discharges
- Appendix B: Routine Facility Inspections
- Appendix C: Employee Training Records
- Appendix D: Quarterly Visual Monitoring Inspection Forms
- Appendix E: Analytical Monitoring Reports
- Appendix F: Comprehensive Site Compliance Evaluation

**Burlington International Airport
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1.0 Introduction

This Stormwater Pollution Prevention Plan (SWPPP) covers the operations at Burlington International Airport (BTV), located at 1200 Airport Drive #1, South Burlington, Vermont. It has been developed as required under Vermont's Multi-Sector General Permit (General Permit 3-9003). This SWPPP describes the BTV facility and its operations, develops an inventory of potential pollutant sources (PPS's), identifies controls and best management practices (BMP's) for reducing the discharge of pollutants in stormwater runoff, and outlines measures for implementing and reviewing this plan.

BTV's SWPPP, including site map and listing of Best Management Practices (BMP's), were updated in April 2013 for the following reasons:

- To reflect the construction of one new BMP covered under the recently issued Underground Injection Control (UIC) Permit No. 6-0117 and associated construction since the SWPPP was last updated on April 1, 2012.
- To reflect one PPS location that is no longer valid.

No changes to the overall Stormwater Management Program (SWMP), other than updating the SWPPP dated April 1, 2012, were required. Construction projects at BTV necessitating update of the SWPPP for the 2012 reporting year include the following:

- Aircraft Deicing Fluid Treatment System, 890 Ramp. Completed in December, 2012.

Multi-Sector General Permit (MSGP) #3028-9003 was re-authorized on August 4, 2011. A Notice of Intent (NOI) for coverage under the NPDES Multi-Sector General Permit (MSGP) 3-9003 for Stormwater Discharges Associated with Industrial Activity was submitted to the Vermont Agency of Natural Resources (VT. ANR) for BTV on August 18, 2011. BTV was previously authorized under Permit Number 3028-9003 on December 4, 2006 which expired on August 18, 2011.

Additionally, General Permit 3-9014 (2012) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) was issued by VT. ANR on December 5, 2012. Submission of an NOI for the newly issued MS4 General Permit is currently pending.

This SWPPP includes the inactive quarry formerly operated by SD Ireland on airport property. However, this SWPPP does not include the portions of the airport that are currently leased by the Army National Guard and the Air National Guard, as these entities have submitted separate SWPPPs for their own operations.

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2.0 Pollution Prevention Team

The Pollution Prevention Team (PPT) will be in charge of developing, implementing, and revising the SWPPP and ensuring that it is in compliance with the general permit.

Leader: Heather Kendrew, P.E. Office Phone: (802) 863-2874

Title: Director of Maintenance, Engineering, and Environmental Compliance

Cell Phone: (802) 316-7432

Responsibilities:

- Identify potential pollutant sources and risks
- Conduct annual compliance evaluation
- Perform routine inspections
- Coordinate monitoring tasks, including quarterly visual monitoring, benchmark monitoring, and annual effluent limitation monitoring
- Report and record keeping
- Establish pollution prevention team
- Coordinate initial site assessment
- Identify potential pollutant sources and risks
- Conduct employee training
- BMP Maintenance
- Evaluate the effectiveness of the designated BMPs and SWPPP on a regular basis
- Modify the SSWPPP as dictated by site activities and conditions

Member: Jon B. Leinwohl, P.E./Greg Goyette, P.E. Office Phone: (802) 864-0223

Title: Professional Engineers Cell Phone: (802) 734-0446

Responsibilities:

- Identify potential pollutant sources and risks
- Coordinate initial site assessment
- Modify the SSWPPP as dictated by site activities and conditions
- Coordinate monitoring tasks, including quarterly visual monitoring, benchmark monitoring, and annual effluent limitation monitoring
- Conduct annual compliance evaluation
- Perform routine inspections

3.0 Site Description

3.1 Facility Information

Street Address: 1200 Airport Drive, #1

City: South Burlington State: VT Zip: 05403

Latitude: 44° 28' 08" Longitude: 73° 09' 17"

SIC Code(s): 4581 MSGP Sector: S

Phone: (802) 863 - 2874 Fax: (802) 863-7947

E-mail: hkendrew@btv.aero

3.2 Narrative Site Description

BTV consists of the airport terminal, runways, taxiways, parking areas, aircraft storage and maintenance buildings, airport businesses, operations, and storage facilities. This area has undergone changes in recent years, including runway and taxiway expansion, South End Development, Heritage Flight Campus Expansion, and related stormwater improvements.

Total site area in acres: BTV is approximately 942 acres in size.

BTV is operational 24 hours per day, 365 days per year. Deicing occurs on a seasonal basis, ranging from approximately October 15 through April 15, depending on weather conditions.

Maintenance activities include aircraft cleaning, janitorial services, aircraft service and repair, vehicular maintenance, material handling, deicing of aircraft, and deicing of runways, taxiways, ramps and aprons.

There are thirty-three (33) buildings located within the BTV site. See the attached plan entitled *Burlington International Airport, Multi-Sector General Permit (MSGP) Site Drainage Map* dated April 1, 2012 with revisions dated April 1, 2013 for locations of all buildings, BMP's and PPS's.

Table 1 presented below provides a description and a corresponding function of each building.

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| Table 1: Airport Buildings | | |
|-----------------------------------|-------------------------------------------|----------------------------------------------------------------------|
| Bldg No. | Building Name | Building Function |
| 01 | Parking Garage | Passenger parking for vehicles |
| 02 | Rental Car (Hertz) | Car detailing, washing |
| 03 | FAA Air Traffic Control Tower | Air Traffic Control |
| 04 | FAA Air Traffic Control Administration | Air Traffic Control administration |
| 05 | Airport Terminal | Air operations, travel |
| 06 | Storage Building | Vehicle storage |
| 07 | North Hangar (misc. tenants) | Aircraft and equipment storage |
| 08 | Radar Facility | Radio/radar tower |
| 09 | Former Radar Facility | Storage |
| 10 | Heritage West - Office Building | FBO – office, terminal |
| 11 | Heritage West - maintenance hangar | Hangar, maintenance area |
| 12 | Heritage West - T-hangars | Airplane storage |
| 13 | FedEx Offices | Office, equipment storage |
| 14 | Snow Removal and Maintenance Building | Equipment maintenance and storage |
| 15 | Building 870 | Vehicle maintenance and storage |
| 16 | Heritage Flight - Aviation Support Hangar | Aircraft maintenance and washing, general aviation terminal building |
| 17 | Heritage Flight – Building 890 | Office, terminal, aircraft maintenance and storage |
| 18 | Carpentry shop | Wood, tools, storage |
| 19 | Aviatron building | Aircraft generator and hydraulic system maintenance |
| 20 | Storage Shed | Building removed from site. Building number retained in this list. |
| 21 | Storage Shed | Building removed from site. Building number retained in this list. |
| 22 | Pratt and Whitney | Aircraft maintenance – tenant |
| 23 | Vermont Flight Academy | Aircraft maintenance – tenant |
| 24 | Private hangar (rented) | Aircraft storage – tenant |
| 25 | Private hangar (rented) | Aircraft storage – tenant |
| 26 | Private hangar (rented) | Aircraft storage – tenant |
| 27 | Tech Aviation School | Aircraft maintenance – tenant |
| 28 | Private hangar (rented) | Aircraft storage – tenant |
| 29 | Avionics Repair | Communication equipment |
| 30 | Aircraft hangar | Aircraft maintenance and storage |
| 31 | FAA ILS Localizer Bldg. | Navigation equipment |
| 32 | FAA Glide Slope Bldg. | Navigation equipment |
| 33 | FAA Glide Slope Bldg. | Navigation equipment |
| 34 | FAA ILS Localizer Bldg. | Navigation equipment |
| 35 | Heritage Aviation Fuel Storage | Storage of Jet-A fuel and AVGAS |

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There are many vehicles owned and operated by BTV on the site, including plows, sweepers, loaders, tractors, trucks and automobiles. Tenants also have many vehicles on the site similar in type to those owned by BTV. In addition, car rental companies have fleets of vehicles under their ownership. These vehicles are parked on the site in the parking garage when not rented. Therefore, the total number of vehicles on the site varies on any given day.

Outdoor activities and storage of materials:

Outdoor activities consist of aircraft operations, aircraft maintenance, and seasonal deicing activities. A listing of items stored at PPS areas is presented in *Table 4: Inventory of Site Areas and Activities Exposed to Stormwater*.

Number and location of stormwater outfalls to surface waters, ditches, or storm drains:

There are seventeen stormwater outfalls to surface waters or wetlands. The following list includes the numbering designations identifying outfalls as used in the previous SWPPP. (Note: each outfall has been listed with a second number in parenthesis, this number is the drainage structure number designation as shown on the attached “*Multi – Sector General Permit (MSGP) Site Drainage Map*,” attached to this report.

- Q001A (Structure Designation Number, S1.000) – This outfall discharges to an unnamed tributary of the Winooski River, which in turn drains to Lake Champlain. It is located at the northwestern end of the site, northerly of Airport Parkway. This discharge has two existing Stormwater Discharge Permits (3028-INDS.1 and 3028-9010.A) and is also a sampling location for benchmark monitoring.
- DO18 (S4.001) – This outfall discharges to Muddy Brook. Muddy Brook drains to the Winooski River, which in turn drains to Lake Champlain. This outfall is located at the southeastern end of the site, and is part of Permit 3028-INDS.1. This outfall is also a sampling location for benchmark monitoring.
- MU01 (S3.043), MU02 (S3.007), MU03 (S3.039), MU04 (S3.033), and MU05 (S3.023) – These five discharge points drain into a Class 2 wetland, contiguous to Muddy Brook. The points are located on Eagle Drive and along the western edge of the area known as “The Valley” located within the airport boundary. The wetland is conveyed to a closed drainage system with discharge to Muddy Brook at DO18. The discharge point designations MU0X are part of two Permits: 3845-INDS.A and 3028-9010.A.
- PO01 (S2.001), PO02 (S3.001), PO05 (S2.020), PO06 (S2.033), and PO07 (no number) – These five discharges drain to a Class 2 wetland, contiguous with a tributary to Potash Brook. Potash Brook drains to Lake Champlain. These outfalls are located at the southern end of the site, and are part of Permit 3028-

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INDS.A, except discharge point PO02, which is covered under BTV's MS-4 Permit. PO05 is also a sampling point for benchmark monitoring. It is noted that discharge point PO01 has been plugged and buried, and no longer serves as a discharge point for stormwater.

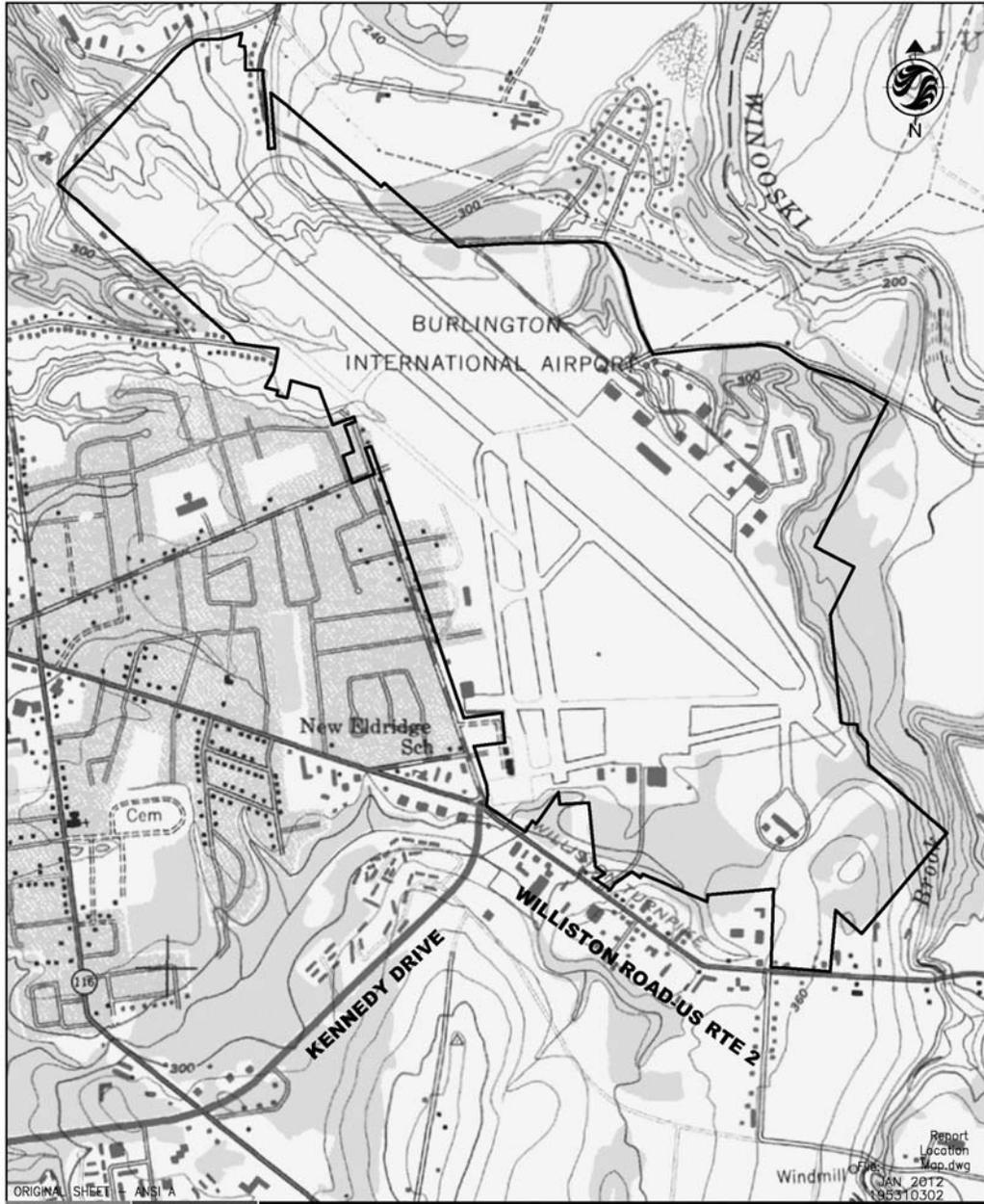
- NG001-P (S6.016), NG002-N (S6.008), NG003-O (S6.005.0), and NG004-M (S6.001) – these four stormwater outfalls discharge to an unnamed tributary of the Winooski River, which in turn discharges to Lake Champlain. They are located at the northern end of the site, near National Guard Avenue. These discharge points are part of Permit 3028-INDS.1.
- SW001 – This outfall is located at an unnumbered drainage structure located at the easterly corner of Williston Road and Airport Drive, just outside the airport property. The stormwater exits S2.036 located within the airport, and enters the City of South Burlington stormwater system at the unnumbered catch basin. The discharge is associated with BTV's MS-4 Permit.

Under the MSGP, the facility is categorized by Standard Industrial Classification (SIC) Code 4581 (Air Transportation Facilities) and falls under Sector S classification (Air Transportation).

As part of the facility's MSGP, MS-4, UIC, and operational Stormwater Discharge Permit conditions, BTV continues to implement stormwater monitoring, groundwater monitoring, and drainage structure inspection programs.

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3.3 General Location Map



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Client/Project
BURLINGTON INTERNATIONAL AIRPORT
MSGP PERMIT

Figure No.
1.0
Title
**PROJECT
LOCATION MAP**

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3.4 BTV Facility Site Map

See the attached plan entitled *Burlington International Airport, Multi-Sector General Permit (MSGP) Site Drainage Map* dated April 1, 2012 with revisions dated April 1, 2013 for locations of all labeled outfalls, water courses, wetlands, buildings, BMP's and PPS's.

3.5 Description of Receiving Waters

Receiving Water Name: Unnamed tributary to Winooski River and Muddy Brook

Discharge Points flowing to this receiving water: D018 (S4.001), Q001A (S1.001), NG001-P (S6.016), NG002-N (S6.008), NG003-O (S6.005.0), and NG004-M (S6.001)

Applicable Vermont Water Quality Standards for Class B Cold Water Fish Habitat:

- Turbidity: not to exceed 10 NTU
- Dissolved Oxygen: not less than 7 mg/l and 75% saturation at all times
- Escherichia coli: not to exceed 77 organisms/100 ml
- Total increase from ambient temperature: not to exceed 1.0 °F
- Phosphorus: not to exceed 0.01 mg/l
- Nitrogen: not to exceed 5.0 mg/l as NO₃-N at flows exceeding low median monthly flows
- pH: maintain within the range of 6.5 and 8.5
- All other applicable standards for Class B, cold water fish habitat waters

Receiving Water Name: Class 2 Wetland W1 (3.16 acre area) contiguous to Potash Brook, and Class 2 Wetland W2 (7.03 acre area) contiguous to Muddy Brook.

Discharge Points flowing to this receiving water: P001 (S2.001), P005 (S2.020), P006 (S2.033), P007 (S2.036), and MU01 (S3.043), MU02 (S3.007), MU03 (S3.039), MU04 (S3.033), MU05 (S3.023).

Applicable Vermont Water Quality Standards for Class B Warm Water Fish Habitat:

- Turbidity: not to exceed 25 NTU
- Dissolved Oxygen: not less than 5 mg/l and 60% saturation at all times
- Escherichia coli: not to exceed 77 organisms/100 ml

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- Total increase from ambient temperature:

| <i>Ambient temperature</i> | <i>Total allowable increase above ambient</i> |
|----------------------------|-----------------------------------------------|
| Above 66 °F | 1.0 °F |
| 63 to 66 °F | 2.0 °F |
| 59 to 62 °F | 3.0 °F |
| 55 to 58 °F | 4.0 °F |
| Below 55 °F | 5.0 °F |

- Phosphorus: not to exceed 0.01 mg/l
- Nitrogen: not to exceed 5.0 mg/l as NO₃-N at flows exceeding low median monthly flows
- pH: maintain within the range of 6.5 and 8.5
- All other applicable standards for Class B, warm water fish habitat waters

Impaired Status: According to the *State of Vermont 2010 303(d) List of Impaired Waters*, both Potash Brook and Muddy Brook have been previously identified as impaired by DEC. Potash Brook, included in Part D of the list, is now considered a surface water with a completed and approved TMDL, and therefore is now outside the scope of Clean Water Act Section 303(d). The lower seven miles of Muddy Brook are listed by DEC as impaired because of nutrients, temperature, and toxics. Unnamed tributaries of the Winooski River, located within the vicinity of BTV, are not designated as impaired. A summary of primary watersheds contained within the BTV site is presented in Table 2 below:

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Table 2: Watershed Drainage Summary

| <i>Watershed Area</i> | <i>Stormwater Flow Description</i> | <i>Total Area (acres)</i> | <i>Impervious surface area (%)</i> | <i>Runoff Coefficient</i> | <i>Drainage Discharge Point</i> | <i>Drainage Name</i> |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------|---------------------------|-------------------------------------------------------------------------------------------|-------------------------------------|
| AREA 1 | Vermont Army National Guard Aviation Support Facility. SWPPP prepared by others, not part of this document. | 0.0 BTV 29.2 VTARNG | 46.6 | High | Unnamed | Unnamed tributary to Winooski River |
| AREA 2 | Sheet flow from runway and taxiways at the north end of the site and ditch flow to the stormwater inlets to NG001-P (S6.016), NG002-N (S6.008), NG003-O (S6.005.0) and NG004-M (S6.001). | 50.4 BTV 52.1 VTANG | 26.8 BTV | High | Groundwater & NG001-P (S6.016), NG002-N (S6.008), NG003-O (S6.005.0) and NG004-M (S6.001) | Unnamed tributary to Winooski River |
| AREA 3 | Vermont Air National Guard installation. SWPPP prepared by others, not part of this document. | 32.7 BTV 183.1 VTANG | 19.0 BTV | High | Unnamed | Muddy Brook |
| AREA 4 | Sheet flow from runway and adjacent grassed area to an on-site infiltration system. | 2.4 | 25.0 | High | Groundwater | N/A |
| AREA 5 | Sheet flow from runway and adjacent grassed area to an on-site infiltration system. | 10.4 BTV 5.9 VTANG | 26.9 BTV | High | Groundwater | N/A |
| AREA 6 | Parking area/Airport Terminal: sheet flow across paved areas to storm inlets to stormwater detention and infiltration systems, which discharge to Q001A or infiltrate. Sheet flow from runways and adjacent grassed areas infiltrate or discharge to stormwater system discharging to Q001A. | 145.3 | 34.1 | High | Groundwater & Q001A (S1.001) | Unnamed tributary to Winooski River |
| AREA 7 | Sheet flow from runways and taxiways and adjacent grassed areas to two (2) on-site infiltration systems. No discharge. | 13.1 | 48.9 | High | Groundwater | N/A |

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Table 2: Watershed Drainage Summary

| <i>Watershed Area</i> | <i>Stormwater Flow Description</i> | <i>Total Area (acres)</i> | <i>Impervious surface area (%)</i> | <i>Runoff Coefficient</i> | <i>Drainage Discharge Point</i> | <i>Drainage Name</i> |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| AREA 8 | Runoff from pervious areas between runways at the center of the site to infiltration areas. No discharge. | 11.8 | 6.8 | High | Groundwater | N/A |
| AREA 9 | Stormwater runoff sheet flow, shallow concentrated flow and ditch flow from: - Building 35 and adjacent paved and grassed areas downslope to MU01 (S3.043) - Buildings 15, 16, 22, adjacent ramps, other paved areas, and grassed areas to MU02 (S3.007) - Roof drainage flow from Building 17 and sheet flow from surrounding grassed areas to bio-retention basin (S3.018.0) - Sheet flow from the 890 Ramp to diversion structure, pump station, and infiltration field (S3.009.6.13) with overflow to MU02 (S3.007). - Sheet flow from the Valley West Apron to trench drain, pump station, and infiltration field (S3.021) with overflow to MU02 (S3.007). - Sheet flow from buildings 23 – 30 and adjoining ramps, taxiways, and grassed areas to MU3 (S3.039) and MU4 (S3.033) - Sheet flow from roads, parking lots, and buildings to MU05 (S3.023). | 155.4 | 34.2 | High | MU01 (S3.043) MU02 (S3.007) Ret. Basin (S3.018.0) Infiltra. Field (S3.021) Infiltra. Field (S3.009.6.13) MU02 (S3.007) Infiltra. Field (S3.021) MU02 (S3.007) MU03 (S3.039) MU04 (S3.033) MU05 (S3.023) | Muddy Brook |

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Table 2: Watershed Drainage Summary

| <i>Watershed Area</i> | <i>Stormwater Flow Description</i> | <i>Total Area (acres)</i> | <i>Impervious surface area (%)</i> | <i>Runoff Coefficient</i> | <i>Drainage Discharge Point</i> | <i>Drainage Name</i> |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| AREA 9 Continued | - Sheet flow from runway, ramps, other paved areas, and along ditch lines to DO18 (S4.001) - Discharge points MU01 - MU05 exit the site through DO18. | | | | DO18 (S4.001) | |
| AREA 10 | Sheet flow from SD Ireland sand and gravel quarry, contained in the quarry with stone berms; no discharge | 27.7 | 88.4 | High | No discharge offsite | N/A |
| AREA 11 | - Sheet flow from Carpentry Shop (Bldg 18)/Aviatron (Bldg 19) over bank to wetland - Sheet flow from runway, taxiway, and other paved and grassed areas into two (2) infiltration chambers and to PO01 (S2.001) - Sheet flow from paved surfaces near Maintenance Shop (Bldg 14) to PO02 (S3.001) - Sheet flow from runway, taxiway, and other paved and grassed areas into an infiltration chamber and to PO05 (S2.020) - Sheet flow across the Heritage West apron to PO06 (S2.033) - Collection from unknown source(s) to PO07 | 70.3 | 48.9 | | Wetland W2 PO01 (S2.001) PO02 (S3.001) PO05 (S2.020) PO06 (S2.033) PO07 (no number) | Potash Brook |
| AREA 12 | Sheet flow from lawn area to City Stormwater System | 0.5 | 7.1 | High | City of South Burlington | Stormwater System |
| AREA 13 | Sheet flow from concrete surfaces into a trench drain, to a swirl concentrator, to on-site discharge | 2.9 | 96.6 | High | Groundwater | N/A |
| AREA 14 | Sheet flows from parking lot and roads, and adjoining grassed areas to City of South Burlington | 0.9 | 66.7 | High | City of South Burlington | Stormwater System |

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| Table 2: Watershed Drainage Summary | | | | | | |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------|---------------------------|---------------------------------|----------------------|
| <i>Watershed Area</i> | <i>Stormwater Flow Description</i> | <i>Total Area (acres)</i> | <i>Impervious surface area (%)</i> | <i>Runoff Coefficient</i> | <i>Drainage Discharge Point</i> | <i>Drainage Name</i> |
| | Stormwater System | | | | | |
| AREA 15 | Sheet flows from parking lot, roads, buildings, and adjoining grassed areas to City of South Burlington Stormwater System | 3.7 | 64.9 | High | City of South Burlington | Stormwater System |
| AREA 16 | Sheet flow from paved long term and employee parking areas to exfiltrating sand filter S1.016.2.1 | 5.9 | 88.1 | High | Exfiltrating Sand Filter | N/A |
| TOTAL AREA | SWPPP FOR BTV ONLY | 533 BTV | N/A | HIGH | VARIES | VARIES |

3.6 Precipitation Information

Average annual precipitation: According to data provided the National Weather Service, the average annual precipitation for western Vermont is 39 inches.

Wettest months: June, July, August, and September

Expected rainfall in the wettest month: 4.29 inches (August)

Types/intensity of storms: The following table shows the rainfall depths associated with various storm events in Chittenden County, Vermont.

| Table 3: Rainfall Depths (inches) Associated with the 1-Year, 2-Year, 10-Year, and 100-Year, 24-Hour Storm Event in Chittenden County, Vermont | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------|----------------------|
| 1-yr, 24-hr | 2-yr, 24-hr | 10-yr, 24-hr | 100-yr, 24-hr |
| 2.1 | 2.3 | 3.2 | 5.2 |

How are industrial activities affected by changing precipitation and temperature? Industrial activities on the site are not substantially affected by changes in precipitation or temperature patterns.

3.7 Inventory of Exposed Materials and Potential Pollutant Sources

Table 4 on the next page summarizes activity areas and potential pollutant sources (PPS's) at BTV.

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| Table 4: Inventory of Site Areas and Activities Exposed to Stormwater | | | | |
|------------------------------------------------------------------------------|---------------------------------------|------------------------------|---------------------------------------------------------------------------|-------------------------------------------------|
| Map Key | Activity/ Area of the Facility | Significant Materials | Amount (Approx.) | Discharge Point |
| PPS1 | Deicing area | Propylene glycol | Minimal to small amounts from airport terminal gates | Q001A (S1.001) |
| | | Sodium formate | | |
| | Aircraft fueling operations | Benzene | Potential for spill at each fueling operation | Q001A (S1.001) |
| | | Ethyl benzene | | |
| | | Toluene | | |
| | | xylene | | |
| | MTBE | | | |
| PPS2 | Deicer area | Propylene glycol | Approximately 1,800 gallons/year | P005 (S2.020) |
| | | Sodium Formate | | |
| PPS3 | Deicing storage | Propylene glycol | Above ground storage tanks | P005 (S2.020) |
| | | Sodium Formate | | |
| PPS4 | Aircraft fueling operations | Benzene | Potential for spill at each fueling operation | PO05 (S2.020) |
| | | Ethyl benzene | | |
| | | Toluene | | |
| | | xylene | | |
| | | MTBE | | |
| PPS5 | Old Equipment Storage | Oil | Minor leakage possible of petroleum products from idle equipment | P001 (S2.001) |
| | | Grease | | |
| | | Heavy metals | | |
| PPS6 | Gas/fuel pump | Benzene | 10,000 gallon and 2,000 gallon underground tanks; minimal spill potential | Pumped to municipal wastewater treatment system |
| | | Ethyl benzene | | |
| | | Toluene | | |
| | | xylene | | |
| | | MTBE | | |
| PPS7 | Containment storage for waste fuel | Benzene | 500 gallon above-ground storage tank; minimal spill potential | Pumped to municipal wastewater treatment system |
| | | Ethyl benzene | | |
| | | Toluene | | |
| | | Xylene | | |
| | | MTBE | | |
| PPS8 | Deicing | Propylene glycol | Approximately 600 gallons | D018 (S4.001) |
| | | Sodium formate | | |
| | Aircraft fueling operations | Benzene | Potential for spill at each fueling operation | D018 (S4.001) |
| | | Ethyl benzene | | |
| | | Toluene | | |
| | | xylene | | |
| | MTBE | | | |
| PPS9 | Sand/gravel/mulch stock piles | Sediment | | D018 (S4.001) |

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| Table 4: Inventory of Site Areas and Activities Exposed to Stormwater | | | | |
|------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------|---------------------------------------------------------------------------------------|------------------------------|
| Map Key | Activity/ Area of the Facility | Significant Materials | Amount (Approx.) | Discharge Point |
| PPS10 | Fuel Transfer Station Jet-A and AFGAS fuel storage | Benzene | 3 above ground storage tanks at 25,000 gal each plus 1 at 12,000 gal = 87,000 gallons | D018 (S4.001) |
| | | Ethyl benzene | | |
| | | Toluene | | |
| | | xylene | | |
| | | MTBE | | |
| PPS11 | Deicing storage | Propylene glycol | Storage no longer takes place at this location and tanks have been removed | D018 (S4.001) |
| | Sodium Formate | | | |
| PPS11 PPS 12 | Deicing | Propylene glycol | Approximately 600 gallons | D018 (S4.001) |
| | | Sodium Formate | | |
| | Aircraft fueling operations | Benzene | Potential for spill at each fueling operation | D018 (S4.001) |
| | | Ethyl benzene | | |
| | | Toluene | | |
| | | xylene | | |
| | | MTBE | | |

Table 5 below provides a summary of potential pollutant materials used on site.

| Table 5: Significant Materials Used Onsite | | |
|---------------------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------|
| <i>Trade Name Material</i> | <i>Chemical/ Physical Description</i> | <i>Stormwater Pollutants</i> |
| Hydraulic fluids | Brown oily petroleum Hydrocarbon | Mineral oil |
| Brake fluid | Ethylene glycol-based syrup liquid | Ethylene glycol |
| Antifreeze/coolant | Clear green/yellow liquid | Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc) |
| Oil recovered from steam cleaning | Brown oily water | Oil and grease, solids |
| Wastewater recovered from steam cleaning | Water | Oil and grease, solids |
| Gasoline | Colorless, pale brown or pink petroleum hydrocarbon | Benzene, ethyl benzene, toluene, xylene, MTBE |
| Jet – A fuel | Clear white or yellow liquid | Naptha, naphthalene, kerosene |
| Degreasing solvents | Colorless or white liquid | Trichloroethylene, trichloroethane, perchloroethylene |
| Paint | Various colored liquids | Stoddard solvent, naphtha, bisphenol, arsenic |
| Deicing materials | White powder or colored oily liquid | Propylene glycol, sodium formate |
| Lubricants | Amber liquid or brown paste | Kerosene, mineral oil, petroleum distillates |
| Fertilizers | Liquid or solid granules | Nitrogen, phosphorus |
| Herbicides and pesticides | Various colored to colorless liquids, powder, pellets, or granules | Chlorinated hydrocarbons, arsenic, organophosphates, carbonates, |

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3.8 Inventory of Past Spills and Leaks

An inventory of past spills and leaks is presented in Table 6 below.

| Date | Table 6: Past Spills and Leaks | | | Discharge Point |
|----------------------|-----------------------------------------------------------------------------------------|-------------|-------------|-----------------------------------------------------------------------------------------|
| | Nature of Spill | | | |
| | Source / Cause of Spill | Material | Quantity | |
| 12/13/2010 WMD606 | Diesel fuel spill – snow removal vehicle backed into other vehicle at Maintenance Bldg. | Diesel fuel | 100 gallons | Release contained and cleaned up by hazmat team; some over embankment toward wetland. |
| 5/18/2009 WMD234 | Jet fuel spill – overfill during refueling | Jet-A Fuel | 30 gallons | Released to concrete pad with no drains in vicinity. All product collected and drummed. |
| 1/10/2007 WMD018 | Diesel fuel spill to blacktop | Diesel fuel | 20 gallons | Spill to blacktop. EP&S collected and drummed produce. |

4.0 Non-Stormwater Discharges

4.1 Certification of Non-Stormwater Discharges

A description of non-stormwater discharge testing and certification can be found in Worksheet 1, Appendix A at the end of this document. Outfalls which could not be evaluated are listed in Worksheet 2, Appendix A.

4.2 Allowable Non-Stormwater Discharges

BTV has no allowable non-stormwater discharges as authorized per MSGP Section 1.2.3.

5.0 Best Management Practice (BMP) Identification

5.1 Source Protection BMPs

Stormwater controls and BMPs to prevent or control pollutants in stormwater discharges from the site have been selected with the following considerations: appropriateness for identified potential pollutant sources, feasibility of on-site implementation, and cost.

Good Housekeeping

Good housekeeping practices will be implemented to minimize the risk of stormwater contact with potential pollutant sources by keeping exposed areas clean and orderly. Good housekeeping practices to be implemented at the site include, but are not limited to, the following:

- Store contained fluid indoors (maintenance buildings) whenever feasible
- Maintain an organized inventory of materials used in maintenance buildings
- Perform all maintenance activities inside maintenance buildings
- Park vehicles with any detected fluid leaks inside maintenance buildings and repair
- Ensure that all outdoor dumpsters, trash cans, and other waste containers are adequately covered
- Recycle, or properly dispose of waste materials regularly in approved fashion.
- Do not dispose of waste materials in unapproved areas (e.g., do not pour waste fluids down storm drains, in sewer system, or on the ground)
- Store potential pollutants (i.e., fuels, oils, paints, hydraulic fluids, etc.) in maintenance buildings in appropriate, sealed, and labeled containers
- Regularly maintain and inspect all vehicles
- Include the inspection of all containers, drums, and tanks stored outdoors as part of the routine facility inspection

Minimize Exposure

In order to minimize exposure, ensure that industrial vehicles and equipment that are stored outdoors are regularly maintained and inspected for leaks. All hazardous materials will continue to be handled and stored within the maintenance buildings, and waste materials disposed of promptly and properly. As a general practice, potential pollutants will not be handled outdoors during precipitation events.

Preventative Maintenance

All facility equipment will be inspected monthly and receive regular maintenance, as needed, to prevent system failures and compromised performance that could potentially cause contamination of stormwater runoff.

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Spill Prevention and Response

The risk of potential pollutant releases will be reduced by the following measures:

- Hazardous material handling procedures will be followed by all personnel, and specific training will be provided
- Absorptive materials will be placed beneath aircraft during fueling operations
- Storage containers will be regularly inspected and maintained, as needed (see Section 5.1 Routine Inspections).
- Emergency spill kits will be available where materials are commonly handled (Maintenance buildings)
- Material handlers will be trained in spill prevention and response procedures, including the spill response instructions Hazardous Material Spill Response Environmental Fact Sheet (see Section 5.2 Spill Response).

5.1.1 Area Specific BMPs

5.1.1.1 Runway Deicing

| BMP | Implementation Date | Responsible Party |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------|
| Evaluate current chemical application rates to avoid over-application. | Summer 2007/ ongoing | BTV |
| Install devices to meter the amount of chemical applied to runways. | Ongoing | BTV |
| Continue to maintain runway ice detection (RID) system or pavement sensor to monitor runway temperatures and inform operators when temperatures are approaching freezing conditions. This increases the likelihood of timely and effective deicing operations. | Installed and in use | BTV |
| When possible, avoid applying deicing chemicals under extreme cold and dry conditions, which make it difficult for the chemicals to adhere to the ice surface. | October-April annually | BTV |
| Consider “pre-wetting” deicing chemicals to improve the adhesion to the iced surface and increase the efficiency rate of the application. | Previously evaluated and deemed not feasible | BTV |
| Pre-treat or promptly treat surfaces to inhibit the strong bonding of ice. | October 2007/ ongoing | BTV |
| Use drain blocks to separate deicing chemicals from storm drains. | October 2007/ ongoing | BTV |
| Route planes to designated deicing areas. | October 2007/ ongoing | BTV |
| Construct additional subsurface infiltration systems. | October 2007 / ongoing | BTV |

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5.1.1.2 Aircraft Deicing (Main Apron, NOTE 2 Apron, and Valley West Apron)

| BMP | Implementation Date | Responsible Party |
|------------------------------------------------------------------------------------------------|----------------------------|--------------------------|
| Evaluate chemical application rates to avoid over-application. | October 2007 | BTV |
| Implement and monitor ADF Infiltration System, adhering to specification in UIC permit #6-0075 | May 2007 /ongoing | BTV |
| Implement and monitor ADF Infiltration System, adhering to specification in UIC permit #6-0084 | 2009 /ongoing | BTV |

5.1.1.3 Aircraft Deicing (other deicing areas)

| BMP | Implementation Date | Responsible Party |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------|
| Evaluate chemical application rates to avoid over-application. | October 2007/ ongoing | BTV |
| Continue to use Type I and Type II deicing fluids (ADF) when longer holdover times are not a concern. Type I and II contain lower concentrations of additives. | Implemented | BTV |
| Purchase ADFs that use environmentally benign or less toxic chemicals and additives | Summer 2007/ ongoing | BTV |
| Consider mechanical deicing technologies such as boot de-icing and electrical restive heating. | Ongoing | BTV |
| Consider a computerized spraying system to reduce the volume of ADFs used as well as the time needed for deicing. This can increase the efficiency of ADF collection. | Ongoing | BTV |
| Continue spraying ADFs from truck-mounted booms to deliver more fluid to the target area from a closer range, in order to reduce overspray and waste. | Already implemented by Heritage/ongoing | BTV |
| Consider using ice detection systems and sensors to determine if deicing is necessary. | Ongoing | BTV |

5.1.1.4 Managing Glycol Solutions

| BMP | Implementation Date | Responsible Party |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------|
| Continue to consider air temperature when preparing glycol solutions (i.e., “blend to temperature”). | Already implemented | BTV |
| Avoid applying glycol-based deicers near storm drains. | Summer 2007 | BTV |
| Follow manufacturers’ recommendations when preparing and applying ADFs. | Summer 2007 | BTV |
| Properly maintain spreading equipment to increase efficiency and reduce the potential for over-application. | Summer 2007 | BTV |
| Consider using a vacuum truck to recycle glycol. Fluids containing as little as 5% glycol can be recycled. | Previously evaluated and determined not feasible | BTV |

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5.1.1.5 Aircraft, Vehicle, and Equipment Maintenance and Cleaning Areas

| BMP | Implementation Date | Responsible Party |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------|
| Continue to conduct all maintenance and cleaning activities indoors or in a designated, contained area. Prohibit such activities outside of these areas. | May 2007/ongoing | BTV |
| Use drip pans under all aircraft, vehicles, and equipment waiting for maintenance. | May 2007/ongoing | BTV |
| Maintain an organized inventory of all chemicals and materials. | May 2007/ongoing | BTV |
| Provide secondary containment for fuels and hydraulic fluids (e.g., store containers in tubs or buckets). | May 2007/ongoing | BTV |
| Drain all parts prior to disposal. | May 2007/ongoing | BTV |
| Do not pour liquid waste down floor drains, sinks, or storm drains. | May 2007/ongoing | BTV |
| Properly dispose of greasy rags, oil filters, air filters, batteries, spent coolant, degreasers, and similar products. Promptly transfer used fluids to a designated appropriate storage container. | May 2007/ongoing | BTV |
| Store used batteries in a leak-proof, noncorrosive container prior to proper disposal. | May 2007/ongoing | BTV |
| Use dry cleanup methods for apron and hangar floor. | May 2007/ongoing | BTV |
| Direct stormwater from maintenance and cleaning areas to treatment areas. | May 2007/ongoing | BTV |
| Fuel vehicles on impervious surfaces and use funnels and drip pans to reduce spillage. | May 2007/ongoing | BTV |
| Wash vehicles indoors. | May 2007/ongoing | BTV |
| Use only phosphorus-free soaps. | May 2007/ongoing | BTV |
| | | |

5.1.2 Site-wide BMPs

| BMP | Implementation Date | Responsible Party |
|-----------------------------------------------------------------------------------------------------------|----------------------------|--------------------------|
| All spills will be cleaned up immediately using dry methods. Spill areas are never washed down with water | May 2007/ongoing | BTV |
| Catch basins will be cleaned out every year. | May 2007/ongoing | BTV |
| Trash containers and dumpsters will be tightly covered when not in use | May 2007/ongoing | BTV |
| Trash will be picked up every week. | May 2007/ongoing | BTV |
| Grass cover will be maintained in vegetated areas to aid infiltration of runoff. | May 2007/ongoing | BTV |
| Continue regular maintenance of subsurface infiltration system. | May 2007/ongoing | BTV |
| Store only well-maintained planes and vehicles outdoors. | May 2007/ongoing | BTV |
| Store snow only on grass areas, and avoid storing near stormwater drainage areas. | Ongoing | BTV |

5.2 Spill Response

The SWPPP will be modified within 14 days of knowledge of a spill to include information regarding the nature, date, and cause of the release. The plan will be modified with measures to prevent reoccurrence and to improve response.

Specifically, the following procedures will be followed:

1. Assess the Hazard and Perform Initial Response

For spills that can be safely managed without assistance:

- Stop the spill at its source;
- Prevent spilled material from entering storm drains, waterways, drainage ditches, etc;
- Contain spilled material using a barrier (absorbent pads or socks), temporary dike or trench.

For all other spills, a cleanup contractor will likely need to be hired since they have the training and equipment necessary to safely respond to dangerous hazardous material spills.

2. Report the Spill

Any hazardous material spill to the land or water that meets the following criteria must be immediately reported to the Department of Environmental Conservation (DEC) Spill Response Team (spill team) by calling the **24-hour Hazardous Materials Spills Hotline at 1-800-641-5005**. *If there is any question about whether a spill is reportable, call.*

- A spill of 2 gallons or more;
- A spill that is less than 2 gallons, but poses a threat to human health or the environment (for example, a gallon of gasoline spilled to a wetland); or
- A spill that exceeds a CERCLA reportable quantity.

Any person who has knowledge of a spill and who may be subject to liability for that spill, is responsible for reporting the spill. In addition to reporting to the DEC, any spill of hazardous material that impacts (or threatens) surface water (e.g., lakes, streams, wetlands) must also be reported to the U.S. Coast Guard via the National Response Center at **1-800-424-8802**.

3. Clean up and Follow up

- Ensure that the spill is cleaned up to the extent that it no longer presents a threat to human health or the environment;
- Make a hazardous waste determination for all spill cleanup materials;
- Ensure that contaminated soil/water/debris is collected and managed appropriately;
- **For any reportable spill, submit a written follow-up report within 10 days detailing how the spill was cleaned up and how waste was managed.**

5.3 Vehicle and Equipment Washing

All BTV-owned vehicle washing and equipment washing is conducted indoors. Rental car washing discharges to the municipal sewer system (see Section 4.2).

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If there is ever a hazardous spill to a floor drain or to the ground and there is a potential for groundwater contamination or the contents of a holding tank is in question, the Hazardous Spills Hotline (1-800-641-5005) will be contacted for assistance.

5.4 *Sediment and Erosion Control*

Prior to beginning construction projects disturbing greater than one acre the facility will contact the VT ANR at (802)241-4320 to determine if a construction general permit (CGP) is necessary.

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5.5 Structural BMPs

| | |
|------------------------------------|------------------------------------------------------------------------------------------------|
| <u>BMP 1</u> | |
| <u>Structure:</u> | Vortechics Swirl Concentrator Device: Permit #3028-9010.A, S/N 001, formerly Permit #3972-9015 |
| <u>Date of Implementation:</u> | Existing |
| <u>Discharge Point:</u> | Q001A (Stantec S1.000) |
| <u>Area(s) Treated:</u> | Area 6 |
| <u>Pollutants Removed:</u> | Nutrients, glycol, and sediment |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly during de-icing season. |

| | |
|------------------------------------|------------------------------------------------------------------------------------------------------|
| <u>BMP 2</u> | |
| <u>Structure:</u> | Vortechs/Stormtech Treatment System, Permit #3028-9010.A, Note 2, S/N002, formerly Permit #3972-9015 |
| <u>Date of Implementation:</u> | Existing |
| <u>Discharge Point:</u> | Groundwater via infiltration chamber (Stantec S1.023.3) and overflow to Q001A (Stantec S1.000) |
| <u>Area(s) Treated:</u> | Area 6 |
| <u>Pollutants Removed:</u> | Nutrients, sodium formate, glycol, and sediment |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly during de-icing season. |

| | |
|-------------------------------------------|---------------------------------------------------------------------------|
| <u>BMP 3</u> | |
| <u>Structure:</u> | Infiltration Trench Area, UIC Permit #6-0075 – Main Apron & NOTE 2 System |
| <u>Date of Implementation:</u> | 2007 (completed) |
| <u>Discharge Point:</u> | Infiltration to groundwater |
| <u>Area(s) Treated:</u> | Area 6 |
| <u>Pollutants Removed:</u> | Nutrients, sodium formate, glycol, and sediment |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal, maintain vegetated area | When needed |
| Inspection | Monthly during de-icing season. |

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BMP 4

Structure: Vortechincs Swirl Concentrator Device, Permit #1-1391, S/N 001
Date of Implementation: Existing
Discharge Point: P005 (Stantec S2.020)
Area(s) Treated: Area 13
Pollutants Removed: Nutrients, glycol, and sediment

| | |
|------------------------------------|-------------------------------------------------------------------|
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly during de-icing season, one quarterly inspection in July. |

BMP 5

Structure: Oil & Grit Separator
Date of Implementation: 2003
Discharge Point: Municipal Wastewater System
Area(s) Treated: Area 11
Pollutants Removed: Nutrients, oil, glycol, and sediment

| | |
|------------------------------------|-------------------|
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly |

BMP 6

Structure: Exfiltrating Sand Filter, Permit #3028-9010.A, S/N 004, formerly Permit # 1-1580
Date of Implementation: 2003
Discharge Point: Q001A (Stantec S1.000)
Area(s) Treated: Area 6
Pollutants Removed: Nutrients, sediment

| | |
|------------------------------------|---------------------------------|
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly during de-icing season. |

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BMP 7

Structure: Infiltration Chambers (2 locations, subsurface) Permit #1-0839.
Date of Implementation: 2007
Discharge Point: Infiltration – groundwater
Area(s) Treated: Area 11
Pollutants Removed: sodium formate, sediment

Maintenance Requirement(s): Frequency:
 Sediment removal, maintain vegetated area When needed
 Inspection Monthly during de-icing season, one quarterly inspection in July.

BMP 8

Structure: Infiltration Chambers (2 locations, subsurface) Permit #3028-INDS.1, S/N 004.
Date of Implementation: 2007
Discharge Point: Infiltration – groundwater
Area(s) Treated: Area 7
Pollutants Removed: sodium formate, sediment

Maintenance Requirement(s): Frequency:
 Sediment removal, maintain vegetated area When needed
 Inspection Monthly during de-icing season, one quarterly inspection in July.

BMP 9

Structure: Infiltration Chambers (subsurface) Permit #3028-INDS.1, S/N 007.
Date of Implementation: 2007
Discharge Point: Infiltration – groundwater
Area(s) Treated: Area 4
Pollutants Removed: sodium formate, sediment

Maintenance Requirement(s): Frequency:
 Sediment removal, maintain vegetated area When needed
 Inspection Monthly during de-icing season.

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BMP 10

| | |
|-------------------------------------------|------------------------------------------------------------------|
| <u>Structure:</u> | Infiltration Chambers (subsurface) Permit #3028-INDS.1, S/N 006. |
| <u>Date of Implementation:</u> | 2010 |
| <u>Discharge Point:</u> | Infiltration – groundwater |
| <u>Area(s) Treated:</u> | Area 5 |
| <u>Pollutants Removed:</u> | sodium formate, sediment |
| | |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal, maintain vegetated area | When needed |
| Inspection | Monthly during de-icing season. |

BMP 11

| | |
|-------------------------------------------|------------------------------------------------------------------|
| <u>Structure:</u> | Infiltration Chambers (subsurface) Permit #3028-INDS.1, S/N 001. |
| <u>Date of Implementation:</u> | 2010 |
| <u>Discharge Point:</u> | Detention – groundwater |
| <u>Area(s) Treated:</u> | Area 6 |
| <u>Pollutants Removed:</u> | sodium formate, sediment |
| | |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal, maintain vegetated area | When needed |
| Inspection | Monthly during de-icing season. |

BMP 12

| | |
|-------------------------------------------|------------------------------------------------------------------|
| <u>Structure:</u> | Infiltration Chambers (subsurface) Permit #3028-INDS.1, S/N 002. |
| <u>Date of Implementation:</u> | 2010 |
| <u>Discharge Point:</u> | Detention – groundwater |
| <u>Area(s) Treated:</u> | Area 2 |
| <u>Pollutants Removed:</u> | sodium formate, sediment |
| | |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal, maintain vegetated area | When needed |
| Inspection | Monthly during de-icing season. |

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BMP 13

| | |
|-------------------------------------------|------------------------------------------------------------------|
| <u>Structure:</u> | Infiltration Chambers (subsurface) Permit #3028-INDS.1, S/N 003. |
| <u>Date of Implementation:</u> | 2010 |
| <u>Discharge Point:</u> | Infiltration – groundwater |
| <u>Area(s) Treated:</u> | Area 2 |
| <u>Pollutants Removed:</u> | sodium formate, sediment |
| | |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal, maintain vegetated area | When needed |
| Inspection | Monthly during de-icing season. |

BMP 14

| | |
|------------------------------------|-------------------------------------------------------------------------------------------|
| <u>Structure:</u> | Glycol Infiltration Field (subsurface) Permit #UIC 6-0084, South End Development, Phase 2 |
| <u>Date of Implementation:</u> | 2009 |
| <u>Discharge Point:</u> | Infiltration to groundwater |
| <u>Area(s) Treated:</u> | Area 9 |
| <u>Pollutants Removed:</u> | Nutrients, sodium formate, glycol, and sediment |
| | |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly during de-icing season. |

BMP 15

| | |
|-------------------------------------------|------------------------------------------------------------------------------------|
| <u>Structure:</u> | Bioretention Basin, Permit #3845-INDS.A, S/N 002, Heritage Flight Campus Expansion |
| <u>Date of Implementation:</u> | 2009 |
| <u>Discharge Point:</u> | MU01 (Stantec S3.043) |
| <u>Area(s) Treated:</u> | Area 9 |
| <u>Pollutants Removed:</u> | Nutrients, sediment |
| | |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal, maintain vegetated area | When needed |
| Inspection | Monthly during de-icing season. |

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BMP 16

| | | |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--|
| <u>Structure:</u> | Vortechincs Swirl Concentrator Device, Permit #3028-9010.A, S/N 008, formerly 4026-9015 – South End Development, Phase 2 | |
| <u>Date of Implementation:</u> | 2009 | |
| <u>Discharge Point:</u> | Groundwater via Glycol Infiltration Field (Stantec S3.021) and overflow to MU02 (Stantec S3.001) | |
| <u>Area(s) Treated:</u> | Area 9 | |
| <u>Pollutants Removed:</u> | Nutrients, sodium formate, glycol, and sediment | |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> | |
| Sediment removal | When needed | |
| Inspection | Monthly during de-icing season. | |

BMP 17

| | | |
|------------------------------------|-------------------------------------------------------------------------------|--|
| <u>Structure:</u> | Glycol Infiltration Field (subsurface) Permit #UIC 6-0117, 890 Air Cargo Ramp | |
| <u>Date of Implementation:</u> | 2012 | |
| <u>Discharge Point:</u> | Infiltration to groundwater | |
| <u>Area(s) Treated:</u> | Area 9 | |
| <u>Pollutants Removed:</u> | Nutrients, sodium formate, glycol, and sediment | |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> | |
| Sediment removal | When needed | |
| Inspection | Monthly during de-icing season. | |

6.0 BMP Implementation

6.1 Routine Facility Inspections

Facility inspections will be performed by the Airport Engineer, or their designated representative. In order to maintain compliance with MSGP 3-9003 conditions, BTV's future monthly routine facility inspections will be performed as stated per guidance provided by VT ANR, Stormwater Program staff (ref. e-mail correspondence dated March 5, 2012):

- **During Deicing Season (October 15 to April 15)**
All BMP's and all PPS's will be inspected monthly during the deicing season.
- **During Non-deicing Season (April 16 to October 14)**
All PPS's will be inspected monthly during non-deicing season. BMP's do not require monthly inspection during this period other than those inspections that are required to satisfy inspection conditions included in operational Stormwater Discharge Permits.
- Monthly routine facility inspections performed during April and October will include all BMP's and PPS's.

If stormwater BMPs are found to be functioning incorrectly, maintenance will be performed before the next anticipated storm event, or as necessary to maintain effectiveness of the stormwater controls. A sample inspection form and records of past inspections will be kept in Appendix B of the SWPPP.

6.2 Employee Training

All employees will attend an annual training session. New employees will be trained within two weeks of hire. Records of attendance are to be kept with this plan using Appendix C found at the end of this plan.

Topics to be included in employee training:

- Introduce Pollution Prevention Team and discuss need for the SWPPP
- Spill response procedure
- Review of past spills
- Review of good housekeeping procedures
- Proper material handling procedures
- Proper disposal or recycling of materials
- Be sure employees know where cleaning materials and spill kits are located
- Review sources of stormwater pollutants used onsite

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- Familiarize employees with drainage routes near areas where industrial materials are handled
- Proper handling (collection, storage, and disposal) of potential pollutants and hazardous materials
- Maintenance of structural BMPs

7.0 Monitoring Requirements

Ultimately, the goal of this SWPPP is to protect the quality of water resources. To evaluate the effectiveness of the measures described here, the following monitoring activities will be conducted on the stormwater discharges at the Burlington International Airport. Monitoring results will be used to regularly reassess the impact of pollutant sources and the need for best management practices (BMPs). The SWPPP will be updated and improved throughout the term of the permit and these updates will be informed by the results of monitoring.

7.1 Quarterly Visual Monitoring

Each discharge point on the site will be examined each quarter by the Airport Engineer or their designated representative for evidence of contamination during a runoff event. Monitoring will take place within the first 30 minutes of a precipitation or snowmelt event if possible, but no more than 60 minutes after onset. Precipitation events must be greater than 0.1 inches in magnitude and occur at least 72 hours after the last runoff producing event. Results of quarterly visual monitoring will be found in Appendix D.

7.2 Benchmark Monitoring

Stormwater Monitoring

Benchmark monitoring will include ONLY those outfalls from the airport facility that collect runoff from areas where deicing activities occur (ref. SIC 4581). The deicing outfalls include: Q001A (Stantec S1.001), D018 (Stantec S4.001), and P005 (Stantec S2.020).

For the first year of permit coverage, four benchmark samples will be taken *during the deicing season* from all outfalls that collect runoff from deicing activities. This time period is defined as October 15-April 15. Periods for quarterly monitoring are therefore defined as follows:

- October 15 to November 31.
- December 1 to January 15.
- January 16 to February 28.
- March 1 to April 15.

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This benchmark monitoring will be conducted for the parameters described in Table 9:

| Table 9: Benchmark Monitoring | |
|----------------------------------------------|---------------------------------------|
| Parameter | Benchmark Cutoff Concentration |
| Biological oxygen demand (BOD ₅) | 30 mg/L |
| Chemical oxygen demand (COD) | 120 mg/L |
| Ammonia | 2.14 mg/L |
| pH | 6.0-9.0 s.u. |
| | |

Sampling will occur during a storm event producing at least 0.1 inch of precipitation, and which occurred at least 72 hours after the last storm event. A single grab sample will be taken at each outfall during the first 30 minutes of the discharge. If sampling is not possible during the first 30 minutes, then the sample will be taken during the first hour of the discharge and the reason why sampling during the first half hour was infeasible will be documented.

Sampling will be collected by a qualified environmental professional and processed at Endyne, Inc. in Williston, VT using approved EPA methods. The results of all benchmark monitoring will be submitted to the Agency using a Discharge Monitoring Report (DMR). The samples results will be sent to the Agency no more than 60 days after sampling took place. A sample DMR and a copy of all monitoring reports will be kept in Appendix E of this document.

If the average of the four samples is less than the benchmark value, then the benchmark monitoring requirement has been met for the term of the permit. If the average of the four samples exceeds the benchmark cutoff concentration, then the SWPPP will be reviewed and corrective actions taken as described in section 3.2.2.4 of the MSGP. This includes continuing the sampling four times during the deicing season until the average of the four samples is below the benchmark cutoff concentration.

Groundwater Monitoring

Groundwater monitoring shall be performed per the permit requirements for the following Underground Injection Control (UIC) Program Permits:

- UIC Permit #6-0075 (Aircraft Deicing Fluid Treatment Facility, Main Apron and NOTE2)
- UIC Permit #6-0084 (Aircraft Deicing Fluid Runoff, South End Development, Phase 2).
- UIC Permit #6-0117 (Aircraft Deicing Fluid Treatment System, 890 Ramp)

Water quality sampling will be performed at specified on-site monitoring wells, and the water samples will be analyzed for the constituents listed in Table 10 below.

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| Table 10: Required Monitoring Constituents | |
|---------------------------------------------------|---------------------------|
| Parameter | EPA Method |
| BOD ₅ | 401.5 |
| COD | 410.2 |
| Propylene Glycol (PG) | SW 8015B |
| Ethylene Glycol | SW 8015B |
| Chloride | 325.1 |
| Nitrate | 300.0 |
| Total dissolved solids | 160.1 |
| Alkalinity | 310.1 |
| pH | 150.1 |
| Conductivity | 120.1 (field measurement) |
| Temperature | 170.1 (field measurement) |

Note: Monitoring of Ethylene Glycol is not required for UIC #6-0075

The primary groundwater quality standard that must be maintained at the compliance point is a BOD₅ concentration increase above background of no more than 25 mg/L.

Duration of Monitoring:

Groundwater sampling will be conducted at specified monitoring wells twice annually during October/ November and April/May, coinciding with late fall and spring base streamflow periods as indicated by the Winooski River USGS gage. Sampling in April/May is intended to capture spring runoff and the cumulative effect of winter de-icing operations. BTV initiated this groundwater quality monitoring in 2007. Groundwater sampling will continue under the new SWPPP twice annually until the average of the samples is below the benchmark cutoff concentrations.

Additional Wastewater Monitoring:

Additional wastewater monitoring is required for the 890 Ramp Aircraft Deicing Fluid Treatment System (UIC Permit #6-0117).

Flows from the collection system wet well to the infiltration system will be measured with an in-line magnetic flowmeter. During the first twelve months of operation, weekly flow measurements will be obtained. Subsequently, flows will be measured monthly. The physical and chemical characteristics of the wastewater, as specified in Table 10 above will be analyzed with samples collected from the sump area of the pump station. Wastewater quality will be sampled twice annually, in the Fall (October/November) and Spring (April/May), concurrent with the groundwater quality sampling noted above.

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Reporting:

A summary report describing the results of the monitoring will be prepared for each year of monitoring. The report will provide a basis for establishing whether future changes in groundwater quality are attributable to the operation of the BTV infiltration system. These annual reports will be submitted to the DEC, Drinking Water & Groundwater Protection Division (DWGWP), Underground Injection Control Program by June 30th of the year following sampling.

7.3 Effluent Limitations

There are no effluent limitations associated with BTV.

7.4 Monitoring Associated with Discharges to Impaired Waters

Potash Brook and Muddy Brook are both listed on the *State of Vermont 2010 303(d) List of Impaired Waters*. Potash Brook, included in Part D of the list, is now considered a surface water with a completed and approved TMDL. Muddy Brook is noted in Part A of the list. No TMDL has been approved to date for Muddy Brook.

Potash Brook is an impaired water with a TMDL that was approved by EPA on December 19, 2006. Therefore, no monitoring is necessary at this time unless the Secretary informs BTV otherwise at some time in the future. In the event that such notice is provided in the future, the Secretary's notice would include which pollutant to monitor and the required monitoring frequency.

Muddy Brook is an impaired water as it is listed on page 5 of 9 in the *State of Vermont, 2010, 303(d) List of Waters, Part A – Impaired Surface Waters In Need of TMDL*. Pollutants listed on the 303(d) list are “*Toxics, Nutrients, and Temperature*”. Per review and direction by VT ANR, Stormwater Program personnel, BTV is required to monitor the Muddy Brook outfall (DO18) annually for nutrients including Total Phosphorus and Total Nitrogen.

The following parameters will be monitored for Muddy Brook: Total Phosphorus and Total Nitrogen. Temperature is not required to be monitored. ; The samples will be collected at outfall D018 (Structure Designation Number S4.001).

Monitoring for pollutants of concern will be conducted once each year. Sampling will occur during a storm event producing at least 0.1 inch of precipitation, and which occurred at least 72 hours after the last storm event. A single grab sample will be taken at each outfall during the first 30 minutes of the discharge. If sampling is not possible during the first 30 minutes, then the sample will be taken during the first hour of the discharge and the reason why sampling during the first half hour was infeasible will be documented. Data recorded will include: the date and duration (hours) of the storm event(s) sampled; rainfall measurements or estimates (inches) of the storm event; the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and an estimate (liters) of the discharge samples.

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Sampling will be collected by the Airport Engineer or their designated representative and processed at Endyne, Inc., in Williston, Vermont using approved EPA methods. The samples results will be sent to the Agency no more than 60 days after sampling took place. A copy of the completed DMR sent to the Agency will also be kept with this SWPPP in Appendix E.

This monitoring requirement will be waived after one year if the pollutant of concern is not detected in the stormwater discharge in an amount expected to cause and contribute to a violation of Vermont Water Quality Standards (VWQS), and the SWPPP is documented to reflect that there is no exposure of the pollutant of concern to stormwater at the site.

Corrective Actions must be taken whenever:

- Routine facility inspections, comprehensive site compliance evaluations, or any other process, observation, or event results in discovery of any deficiency; or
- There is an exceedance of a VWQS, or
- Following a benchmark exceedance, based on the average of 4 benchmark monitoring events conducted during the deicing season (Oct 15 – Apr 15), the SWPPP does not meet the requirements of Part 2 of the MSGP

8.0 Compliance Evaluation

A comprehensive site evaluation will be performed every year. This inspection will include all exposed industrial areas identified in Section 3, Table 4, and all BMPs identified in Section 5.5, of this plan for evidence of stormwater pollution.

The results of the inspection will be documented in a report containing at minimum: the date, the person(s) making the inspection, the scope of the inspection, observations relating to the discharge of pollutants from the facility, BMPs needing maintenance, BMPs which failed to operate as designed, locations where additional BMPs are needed, corrective actions taken, and any updates to the SWPPP. Copies of past inspection reports will be kept in Appendix F.

9.0 Endangered Species

Based on a review of the ANR Environmental Interest Locator, there are no federally listed species or designated critical habitats within the immediate vicinity of BTV. Therefore, BTV does not pose an adverse risk to endangered or threatened species, or critical habitat designated under the Endangered Species Act. This site is eligible for coverage under the MSGP by meeting Criteria A, as described in Appendix E of the general permit.

10.0 General Requirements

10.1 Record Keeping and Reporting

A copy of this SWPPP will be sent to the VT ANR, Stormwater Section and the original will be maintained onsite. The following documents will be attached to the SWPPP and available on site:

- A copy of the NOI submitted to the Secretary along with any subsequent correspondence;
- A copy of the authorization to discharge received from the Secretary;
- A copy of the permit (or an electronic copy easily accessible and available to SWPPP personnel);
- A description of any deviations from monitoring and inspection schedules and the reason for the deviation (e.g., adverse weather, impractical to collect samples within the first 30 minutes of a measurable storm event);
- A description of any corrective action taken at the site, including information on the triggering event and dates when problems were discovered and modifications occurred;
- Documentation of any benchmark exceedances and how they were responded to, including either (1) corrective action taken, or (2) a finding that no further pollutant reductions were technologically available and economically practicable and achievable in light of best industry practices consistent with Part 6.2.1.2 of the permit.

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Records pertaining to inspections, monitoring, maintenance, employee trainings, compliance evaluations, and spills will be kept onsite with the SWPPP. These records must be retained for at least five years after the expiration of the permit. This plan will be made available upon request to the Agency, operator of a municipal separate storm sewer receiving the discharge, and to the public if requested in writing to do so.

10.2 Maintaining the Updated SWPPP

This SWPPP will be amended if inspections or monitoring should indicate a deficiency, or Agency personnel determine that it is not effective at controlling stormwater pollutant discharges. The plan will also be amended if changes occur to the facilities layout or operations. A history of amendments will be kept with this plan in Section 11.

10.3 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 gather and evaluate 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 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 (print): Heather Kendrew, P.E.

Title: Director of
Maintenance, Engineering &
Environmental Compliance

Signature: 

Date Signed: 4/29/13

**Burlington International Airport
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11.0 Summary of Updates

| Date Program or Map Amended | Summary of Updates |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| April 1, 2012 | <p>BTV's SWPPP, including site map and listing of BMPs, were updated for the following reasons:</p> <ul style="list-style-type: none"> • To reflect re-authorization of General Permit 3-9003 (MSGP) dated August 4, 2012. • To reflect the construction of several new BMPs covered under newly acquired operational Stormwater Discharge Permits since the previous SWPPP was developed in 2008. <p>No other changes to the SWMP other than updating the SWPPP dated April 1, 2012 were required for 2011.</p> |
| April 1, 2013 | <p>BTV's SWPPP, including site map and listing of BMPs, were updated for the following reasons:</p> <ul style="list-style-type: none"> • To reflect the construction of one new BMP (BMP 17) covered under Underground Injection Control (UIC) Permit #6-0117 (Aircraft Deicing Fluid Treatment System, 890 Ramp) as issued since the SWPPP was last updated on April 1, 2012. • To reflect one PPS location that is no longer valid. The glycol storage facility formerly identified as PPS11 has been relocated (see PPS3) and is no longer a potential pollutant source. In turn, deicing and aircraft fueling operations performed at the Valley West Apron (formerly PPS12) have been renumbered from PPS12 to PPS11. <p>No other changes to the SWMP other than updating the SWPPP dated April 1, 2012 and as amended April 1, 2013 were required for 2012.</p> |
| | |

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Appendix A: Non-Stormwater Discharges

Record the results of the Non-Stormwater Discharge Assessment and Certification in Worksheet 1. If evaluation of any discharge points is impossible, then the discharge points of concern and the reasons they could not be evaluated should be recorded on Worksheet 2.

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Worksheet 1: Assessment and Certification of Non-Stormwater Discharges

| Date of Test | Outfall | Method Used to Evaluate Discharge | Test Results | Potential Sources | Person or Party Conducting the Test |
|--------------|---------|-----------------------------------|--------------|-------------------|-------------------------------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

CERTIFICATION

I _____ (responsible corporate official) 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 gather and evaluate 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 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 & Official Title | Area Code and Telephone No. |
| Signature | Date Signed |

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**Burlington International Airport
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Worksheet 2: Non-Stormwater Discharge Failure to Certify Notification

| Outfall Not Tested/Evaluated | Why Certification is Infeasible | Potential Sources of Non-Stormwater Pollution |
|------------------------------|---------------------------------|-----------------------------------------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

CERTIFICATION

I _____ (responsible corporate official) 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 gather and evaluate 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 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 & Official Title | Area Code and Telephone No. |
| Signature | Date Signed |

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**Burlington International Airport
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Appendix B: Routine Facility Inspections

Keep records of all routine facility inspections here. A sample inspection form has been included (see next two pages).

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| | | | |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|  | Stantec 55 Green Mountain Drive South Burlington, VT |  | City of Burlington, VT Burlington International Airport Multi-sector General Permit |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|

Inspection Item/Stantec Structure Numbre

Routine Facility Inspection Report

Signature _____ Date: _____ Time: _____
 Print: _____ Weather: _____
 Temperature: _____

BMP Inspection Point **BMP__** (As identified in the SWPPP and shown on the MSGP site map)

BMP Location Location of BMP

Control Measures:

Condition of Existing: _____
 Effective? Yes: _____ No: _____
 Need to replace: Yes: _____ No: _____
 Any to be added? _____

Overall Assessment: _____

Incidents of noncompliance observed: _____

Other noncompliance issue identified: _____

Recommended solution(s): _____

Timetable for implementation: _____

Person/persons notified:
 Airport official: _____
 State of Vermont: _____
 Stantec manager: _____

HISTORY:

Any previous problems identified?
 No: _____
 Yes: _____

Previous recommendations, if any:
 No: _____
 Yes: _____

Status of recommendation: _____

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| | | | |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|  | Stantec 55 Green Mountain Drive South Burlington, VT |  | City of Burlington, VT Burlington International Airport Multi-sector General Permit |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|

ACTIVITY TO BE MONITORED

Routine Facility Inspection Report

Signature _____ Date: _____ Time: _____
 Print: _____ Weather: _____
 Temperature: _____

PPS Inspection Point PPS__ (As identified in the SWPPP and shown on the MSGP site map)
 PPS Location Location of PPS

Control Measures:
 Condition of Existing: _____
 Effective? Yes: _____ No: _____
 Need to replace: Yes: _____ No: _____
 Any to be added? _____

Overall Assessment: _____

Incidents of noncompliance observed: _____

Other noncompliance issue identified: _____

Recommended solution(s): _____

Timetable for implementation: _____

Person/persons notified:
 Airport official: _____
 State of Vermont: _____
 Stantec manager: _____

HISTORY:
 Any previous problems identified?
 No: _____
 Yes: _____

Previous recommendations, if any:
 No: _____
 Yes: _____

Status of recommendation: _____

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**Burlington International Airport
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Appendix C: Employee Training Records

Keep a sign in sheet for each employee training session your facility holds and retain them with this SWPPP.

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**Burlington International Airport
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Appendix D: Quarterly Visual Monitoring Inspection Forms

Keep the completed inspection forms with the SWPPP here.

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| | | | |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|  | Stantec 55 Green Mountain Drive South Burlington, VT |  | City of Burlington, VT Burlington International Airport Multi-sector General Permit |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|

Quarterly Visual Inspection Form

Inspector: _____
Date: _____
Weather: _____
Tempera. _____

Discharge Point _____ (As identified in the SWPPP and shown on the MSGP site map)
Location of point _____
Sampled from: _____ Free flowing stream
_____ Partially submerged If so, depth of water: _____
Condition of outlet _____
Other remarks _____

In a clean, clear container, analyze a sample of discharge water for:

Characteristic _____
Color of water: _____
Any odor present: _____
Clarity of sample: _____
Floating Solids: _____
Suspended Solids: _____
Settled Solids: _____
Foam present: _____
Oil Sheen present: _____
Other indicators: _____

Sampling period: Dec 1, 2011 - Jan 15, 2012
Testing Lab used: Endyne, Inc.; 160 James Brown Drive; Williston, VT (802) 879-4333
Reviewed by: _____

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Appendix E: Analytical Monitoring Reports

Results of your site's benchmark, effluent limitation, and impaired waters monitoring should be kept in this section of the SWPPP.

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| | | |
|-----------------------------------------------------------------------------------|------------------------------------------|-----------------|
|  | Vermont Multi-Sector General Permit | Permit Number: |
| | Discharge Monitoring Report (DMR) | SIC Code(s): |
| | | Outfall Number: |
| | | Sample Date: |
| Facility Name: | | |

| Benchmark Monitoring | Monitoring Year: | | | | |
|-----------------------------|------------------------------|------------------------------------|------------------------------------|-------------------------------------|------------------------------------|
| | Quarter: | <input type="checkbox"/> Jan – Mar | <input type="checkbox"/> Apr – Jun | <input type="checkbox"/> Jul – Sept | <input type="checkbox"/> Oct - Dec |
| Parameter | Cut-off Concentration (mg/L) | Sample Result (mg/L) | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
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| | | | | | |
| | | | | | |

| Effluent Limitation Monitoring <i>(additional space is available on the back)</i> | | | |
|------------------------------------------------------------------------------------------|---------------------------------|-------------------|----------------------|
| Parameter | Sample Type <i>(circle one)</i> | Limitation (mg/L) | Sample Result (mg/L) |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |

| Impaired Waters Monitoring | | |
|-----------------------------------|---------------------------------------|--------------|
| Parameter | Cut-off Concentration (if applicable) | Sample Value |
| | | |
| | | |
| | | |

| | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------|--|
| Certification | | | |
| <p>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 gather and evaluate 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 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.</p> | | | |
| Name: | | Phone Number: | |
| Signature: | | Date: | |

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| Effluent Limitation Monitoring (continued) | | | |
|--------------------------------------------|-----------------------------------|-------------------|----------------------|
| Parameter | Sample Type (<i>circle one</i>) | Limitation (mg/L) | Sample Result (mg/L) |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |

Notes:

Instructions

- A separate DMR form must be submitted for each outfall sampled at your facility.
- List monitoring results for the type(s) of sampling you are reporting in the appropriate section. If your sampling event was used to satisfy more than one type of monitoring (e.g. Effluent Limitation and Benchmark monitoring) you may submit results for each type using the same form.
- For benchmark monitoring, be sure to indicate which quarter the sample was taken in.
- For effluent limitations, the permit may specify that a single grab sample is adequate, or that a daily maximum and a 30 day or monthly average is necessary. Circle the kind of value that you are reporting under the "Sample Type" heading.
- Write additional information about the sample collection and processing in the notes section, such as if the samples were taken more than 30 minutes after the start of discharge and the reason for the delay.
- Keep a copy of your DMR onsite with the SWPPP.
- DMR's must be sent to the Vermont Water Quality Division within 60 days of the sampling event at the following address:

Attn: MSGP Coordinator
 Water Quality Division
 103 South Main Street
 Building 10 North
 Waterbury, Vermont 05671-0408

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Storm Event Data

Information on the storm events sampled should be recorded here. This information does not need to be submitted to the Agency, but should be available upon request.

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**Burlington International Airport
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Calendar Year 2012

| | | | |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|  | Stantec 55 Green Mountain Drive South Burlington, VT |  | City of Burlington, VT Burlington International Airport Multi-sector General Permit |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|

Storm Event Data

Record information concerning the storm events that occurred during stormwater sampling. The information need not submitted to the Agency, they may request the data.

| | | |
|----------------------------------------|-------------------|----------------------------|
| Monitoring Period: | _____ to _____ | |
| | MMM/DD/YYYY | MMM/DD/YYYY |
| Date of storm event: | _____ | Type of monitoring: _____ |
| | MMM/DD/YYYY | Effluent Limit/Benchmark |
| Storm duration: | _____ | Total precipitation: _____ |
| | Hours | Inches |
| Time since last measurable storm event | _____ | |
| | Days and/or hours | |

| | | |
|----------------------------------------|-------------------|----------------------------|
| Monitoring Period: | _____ to _____ | |
| | MMM/DD/YYYY | MMM/DD/YYYY |
| Date of storm event: | _____ | Type of monitoring: _____ |
| | MMM/DD/YYYY | Effluent Limit/Benchmark |
| Storm duration: | _____ | Total precipitation: _____ |
| | Hours | Inches |
| Time since last measurable storm event | _____ | |
| | Days and/or hours | |

| | | |
|----------------------------------------|-------------------|----------------------------|
| Monitoring Period: | _____ to _____ | |
| | MMM/DD/YYYY | MMM/DD/YYYY |
| Date of storm event: | _____ | Type of monitoring: _____ |
| | MMM/DD/YYYY | Effluent Limit/Benchmark |
| Storm duration: | _____ | Total precipitation: _____ |
| | Hours | Inches |
| Time since last measurable storm event | _____ | |
| | Days and/or hours | |

| | | |
|----------------------------------------|-------------------|----------------------------|
| Monitoring Period: | _____ to _____ | |
| | MMM/DD/YYYY | MMM/DD/YYYY |
| Date of storm event: | _____ | Type of monitoring: _____ |
| | MMM/DD/YYYY | Effluent Limit/Benchmark |
| Storm duration: | _____ | Total precipitation: _____ |
| | Hours | Inches |
| Time since last measurable storm event | _____ | |
| | Days and/or hours | |

Note: Add additional data sheets as necessary.

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**Burlington International Airport
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Appendix F: Comprehensive Site Compliance Evaluation

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Inspect the following PPSs for evidence of contamination of runoff and complete the individual report form for each. Include the date of the inspection, use the Remarks column to record any issues uncovered and provide details of the findings in the table attached to this report. Check Done when finished inspecting each PPS.

| PPS | Date | Remarks | Done |
|-----|------|---------|------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |

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Inspect the following stormwater collection systems for evidence of contamination of runoff and complete the individual report form for each. The table has been arranged by permit number and S/N. Include the date of the inspection, use the Remarks column to record any issues uncovered and provide details of the findings in the table attached to this report. Check Done when finished inspecting each system. Discharge point for each included on individual BTV Stormwater Permits structures inspection forms.

| PERMIT 3028-9010.A BTV Master Permit | | | |
|--------------------------------------|------|---------|------|
| S/N | Date | Remarks | Done |
| 001 | | | |
| 002 | | | |
| 003 | | | |
| 004 | | | |
| 005 | | | |
| 006 | | | |
| 007 | | | |
| 008 | | | |
| 009 | | | |

| PERMIT 1-1391 South Apron Expansion | | | |
|-------------------------------------|------|---------|------|
| S/N | Date | Remarks | Done |
| 001 | | | |

| PERMIT 1-0839 North Outfall and Taxiway A Improvements | | | |
|--------------------------------------------------------|------|-------------------------------------------------------|------|
| S/N | Date | Remarks | Done |
| 001 | | No longer covered under this permit – see 3028-INDS.A | |
| 002 | | | |
| 003 | | No longer covered under this permit – see 3028-INDS.A | |

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| PERMIT 3028-INDS.A Reconstruct TW B & C; Relocate TW J; Construct TW G | | | |
|------------------------------------------------------------------------|------|---------|------|
| S/N | Date | Remarks | Done |
| 001 | | | |
| 002 | | | |

| PERMIT 3028-INDS.1 Reconstruct, Mark, and Groove Runway 15-33 | | | |
|---------------------------------------------------------------|------|---------|------|
| S/N | Date | Remarks | Done |
| 001 | | | |
| 002 | | | |
| 003 | | | |
| 004 | | | |
| 005 | | | |
| 006 | | | |
| 007 | | | |

| PERMIT 3845-INDS.A Heritage Flight Aviation Campus Expansion | | | |
|--------------------------------------------------------------|------|---------|------|
| S/N | Date | Remarks | Done |
| 001 | | | |
| 002 | | | |

| PERMIT 6-0084 South End Development, Phase II | | | |
|-----------------------------------------------|------|---------|------|
| | Date | Remarks | Done |
| 001 | | | |

| PERMIT 6-0075 Aircraft De-icing Fluid Treatment Facility | | | |
|----------------------------------------------------------|------|---------|------|
| | Date | Remarks | Done |
| 001 | | | |

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Multi-sector General Permit



| PERMIT MS4 Miscellaneous Areas Not Covered in Other Permits | | | |
|-------------------------------------------------------------|------|---------|------|
| | Date | Remarks | Done |
| 001 | | | |
| 002 | | | |
| 003 | | | |
| 004 | | | |
| 005 | | | |
| 006 | | | |
| 007 | | | |
| 008 | | | |
| 009 | | | |
| 010 | | | |
| 011 | | | |
| 012 | | | |

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EVIDENCE OF STORMWATER POLLUTION

Use this form in conjunction with the Annual Compliance Inspection form to document the existence of failures in the stormwater systems. Use the form for any of the inspection categories, BMPs, PPSs, or collection systems.

| Item Designation: (BMP_, PPS, etc.) | | | Location | | |
|----------------------------------------------------------------------------------------|-----|----|------------------|--------------------|----------|
| Is there evidence of the following problems? | YES | NO | Describe Problem | Corrective actions | Schedule |
| Industrial materials, residue, or trash in contact with stormwater | | | | | |
| Leaks or spills from industrial equipment, drums, tanks, or other containers | | | | | |
| Offsite tracking of industrial or waste material, sediment tracked into site | | | | | |
| Waste materials moving from unexposed areas to exposed areas by wind or other movement | | | | | |
| Evidence or potential for pollutants entering the drainage system | | | | | |
| Evidence of pollutants discharging to the receiving waters at discharge points | | | | | |
| Scouring around discharge points or other degrading of structures; excessive silt | | | | | |

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Multi-sector General Permit



Are there any new sources of potential stormwater pollutants not previously identified in the SWPPP?
YES / NO

If YES, how will the SWPPP be modified to prevent contamination of runoff?

Have either visual inspections or monitoring during the past year indicated pollution of stormwater which has not been addressed? YES / NO

If YES, describe the potential sources of any pollutants found in runoff:

What actions or modifications to the SWPPP are needed to prevent these pollutants from reaching the receiving waters?

Describe any other places where the site inspection indicated noncompliance with the SWPPP and other conditions of the general permit:

What other changes to the SWPPP are needed to ensure that the site is in compliance?

Certification of Compliance

This Compliance Evaluation Report has been prepared by qualified personnel who properly gathered and evaluated information submitted for this Report. The information in this Report, to the best of my knowledge, is accurate and complete. After inspection of all exposed industrial areas BMPs, and stormwater systems, and review of the SWPPP and required monitoring, I find that this facility is in compliance with the SWPPP and the permit.

Name (print): _____

Title: _____

Signature: _____

Date: _____

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Stormwater Pollution Prevention Plan
(SWPPP)
for
Burlington International Airport
South Burlington, Vermont

MSGP 3028-9003

April 1, 2012

Prepared By

Stantec Consulting Services, Inc.

55 Green Mountain Drive

South Burlington, Vermont 05403



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**Burlington International Airport
Stormwater Pollution Prevention Plan (SWPPP)
April 1, 2012**

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- Appendix B: Routine Facility Inspections
- Appendix C: Employee Training Records
- Appendix D: Quarterly Visual Monitoring Inspection Forms
- Appendix E: Analytical Monitoring Reports
- Appendix F: Comprehensive Site Compliance Evaluation

1.0 Introduction

This Stormwater Pollution Prevention Plan (SWPPP) covers the operations at Burlington International Airport (BTV), located at 1200 Airport Drive #1, South Burlington, Vermont. It has been developed as required under Vermont's Multi-Sector General Permit (General Permit 3-9003). This SWPPP describes the BTV facility and its operations, develops an inventory of potential pollutant sources (PPS's), identifies controls and best management practices (BMP's) for reducing the discharge of pollutants in stormwater runoff, and outlines measures for implementing and reviewing this plan.

BTV's SWPPP, including site map and listing of Best Management Practices (BMP's), were updated for the following reasons:

- To reflect re-authorization of Multi-Sector General Permit (MSGP) #3028-9003 dated August 4, 2011.
- To reflect the construction of several new BMP's covered under recently issued operational Stormwater Discharge Permits and associated construction since the previous SWPPP was developed in 2008.

No changes to the overall Stormwater Management Program (SWMP), other than updating the SWPPP dated April 1, 2012, were required. Construction projects at BTV necessitating update of the SWPPP include the following:

- Parallel Taxiway 'G' Expansion and Taxiway 'C' Rehabilitation, Completed in 2009.
- South End Development, Phase I and Phase II, Completed in 2009.
- Heritage Flight Campus Expansion, Completed in 2009.
- Quarry Overflow Parking, Completed in 2009.
- Relocated Taxiway 'J' And Taxiway 'G' Extension, Completed in 2010.
- Reconstruction of Runway 15-33, Completed in 2010.
- Parking Garage Expansion, Phase I, Completed in 2011.

A Notice of Intent (NOI) for coverage under the NPDES Multi-Sector General Permit (MSGP) 3-9003 for Stormwater Discharges Associated with Industrial Activity was submitted to the Vermont Agency of Natural Resources (VT. ANR) for BTV on August 18, 2011. BTV was previously authorized under Permit Number 3028-9003 on December 4, 2006 which expired on August 18, 2011.

This SWPPP includes the inactive quarry formerly operated by SD Ireland on airport property. However, this SWPPP does not include the portions of the airport that are currently leased by the Army National Guard and the Air National Guard, as these entities have submitted separate SWPPPs for their own operations.

2.0 Pollution Prevention Team

The Pollution Prevention Team (PPT) will be in charge of developing, implementing, and revising the SWPPP and ensuring that it is in compliance with the general permit.

Leader: Heather Kendrew, P.E. Office Phone: (802) 863-2874

Title: Director of Maintenance, Engineering, and Environmental Compliance

Cell Phone: (802) 316-7432

Responsibilities:

- Identify potential pollutant sources and risks
- Conduct annual compliance evaluation
- Perform routine inspections
- Coordinate monitoring tasks, including quarterly visual monitoring, benchmark monitoring, and annual effluent limitation monitoring
- Report and record keeping
- Establish pollution prevention team
- Coordinate initial site assessment
- Identify potential pollutant sources and risks
- Conduct employee training
- BMP Maintenance
- Evaluate the effectiveness of the designated BMPs and SWPPP on a regular basis
- Modify the SSWPPP as dictated by site activities and conditions

Member: Jon B. Leinwohl, P.E./Greg Goyette, P.E. Office Phone: (802) 864-0223

Title: Professional Engineers Cell Phone: (802) 734-0446

Responsibilities:

- Identify potential pollutant sources and risks
- Coordinate initial site assessment
- Modify the SSWPPP as dictated by site activities and conditions
- Coordinate monitoring tasks, including quarterly visual monitoring, benchmark monitoring, and annual effluent limitation monitoring
- Conduct annual compliance evaluation
- Perform routine inspections

3.0 Site Description

3.1 Facility Information

Street Address: 1200 Airport Drive, #1

City: South Burlington State: VT Zip: 05403

Latitude: 44° 28' 08" Longitude: 73° 09' 17"

SIC Code(s): 4581 MSGP Sector: S

Phone: (802) 863 - 2874 Fax: (802) 863-7947

E-mail: hkendrew@btv.aero

3.2 Narrative Site Description

BTV consists of the airport terminal, runways, taxiways, parking areas, aircraft storage and maintenance buildings, airport businesses, operations, and storage facilities. This area has undergone changes in recent years, including runway and taxiway expansion, South End Development, Heritage Flight Campus Expansion, and related stormwater improvements.

Total site area in acres: BTV is approximately 942 acres in size.

BTV is operational 24 hours per day, 365 days per year. Deicing occurs on a seasonal basis, ranging from approximately October 15 through April 15, depending on weather conditions.

Maintenance activities include aircraft cleaning, janitorial services, aircraft service and repair, vehicular maintenance, material handling, deicing of aircraft, and deicing of runways, taxiways, ramps and aprons.

There are thirty-three (33) buildings located within the BTV site. See the attached plan entitled *Burlington International Airport, Multi-Sector General Permit (MSGP) Site Drainage Map* dated April 1, 2012 for locations of all buildings, BMP's and PPS's.

Table 1 presented below provides a description and a corresponding function of each building.

**Burlington International Airport
Stormwater Pollution Prevention Plan (SWPPP)
April 1, 2012**

| Table 1: Airport Buildings | | |
|-----------------------------------|-------------------------------------------|----------------------------------------------------------------------|
| Bldg No. | Building Name | Building Function |
| 01 | Parking Garage | Passenger parking for vehicles |
| 02 | Rental Car (Hertz) | Car detailing, washing |
| 03 | FAA Air Traffic Control Tower | Air Traffic Control |
| 04 | FAA Air Traffic Control Administration | Air Traffic Control administration |
| 05 | Airport Terminal | Air operations, travel |
| 06 | Storage Building | Vehicle storage |
| 07 | North Hangar (misc. tenants) | Aircraft and equipment storage |
| 08 | Radar Facility | Radio/radar tower |
| 09 | Former Radar Facility | Storage |
| 10 | Heritage West - Office Building | FBO – office, terminal |
| 11 | Heritage West - maintenance hangar | Hangar, maintenance area |
| 12 | Heritage West - T-hangars | Airplane storage |
| 13 | FedEx Offices | Office, equipment storage |
| 14 | Snow Removal and Maintenance Building | Equipment maintenance and storage |
| 15 | Building 870 | Vehicle maintenance and storage |
| 16 | Heritage Flight - Aviation Support Hangar | Aircraft maintenance and washing, general aviation terminal building |
| 17 | Heritage Flight – Building 890 | Office, terminal, aircraft maintenance and storage |
| 18 | Carpentry shop | Wood, tools, storage |
| 19 | Aviatron building | Aircraft generator and hydraulic system maintenance |
| 20 | Storage Shed | Building removed from site. Building number retained in this list. |
| 21 | Storage Shed | Building removed from site. Building number retained in this list. |
| 22 | Pratt and Whitney | Aircraft maintenance – tenant |
| 23 | Vermont Flight Academy | Aircraft maintenance – tenant |
| 24 | Private hangar (rented) | Aircraft storage – tenant |
| 25 | Private hangar (rented) | Aircraft storage – tenant |
| 26 | Private hangar (rented) | Aircraft storage – tenant |
| 27 | Tech Aviation School | Aircraft maintenance – tenant |
| 28 | Private hangar (rented) | Aircraft storage – tenant |
| 29 | Avionics Repair | Communication equipment |
| 30 | Aircraft hangar | Aircraft maintenance and storage |
| 31 | FAA ILS Localizer Bldg. | Navigation equipment |
| 32 | FAA Glide Slope Bldg. | Navigation equipment |
| 33 | FAA Glide Slope Bldg. | Navigation equipment |
| 34 | FAA ILS Localizer Bldg. | Navigation equipment |
| 35 | Heritage Aviation Fuel Storage | Storage of Jet-A fuel and AVGAS |

**Burlington International Airport
Stormwater Pollution Prevention Plan (SWPPP)
April 1, 2012**

There are many vehicles owned and operated by BTV on the site, including plows, sweepers, loaders, tractors, trucks and automobiles. Tenants also have many vehicles on the site similar in type to those owned by BTV. In addition, car rental companies have fleets of vehicles under their ownership. These vehicles are parked on the site in the parking garage when not rented. Therefore, the total number of vehicles on the site varies on any given day.

Outdoor activities and storage of materials:

Outdoor activities consist of aircraft operations, aircraft maintenance, and seasonal deicing activities. A listing of items stored at PPS areas is presented in *Table 4: Inventory of Site Areas and Activities Exposed to Stormwater*.

Number and location of stormwater outfalls to surface waters, ditches, or storm drains:

There are seventeen stormwater outfalls to surface waters or wetlands. The following list includes the numbering designations identifying outfalls as used in the previous SWPPP. (Note: each outfall has been listed with a second number in parenthesis, this number is the drainage structure number designation as shown on the attached “*Multi – Sector General Permit (MSGP) Site Drainage Map*,” attached to this report.

- Q001A (Structure Designation Number, S1.000) – This outfall discharges to an unnamed tributary of the Winooski River, which in turn drains to Lake Champlain. It is located at the northwestern end of the site, northerly of Airport Parkway. This discharge has two existing Stormwater Discharge Permits (3028-INDS.1 and 3028-9010.A) and is also a sampling location for benchmark monitoring.
- DO18 (S4.001) – This outfall discharges to Muddy Brook. Muddy Brook drains to the Winooski River, which in turn drains to Lake Champlain. This outfall is located at the southeastern end of the site, and is part of Permit 3028-INDS.1. This outfall is also a sampling location for benchmark monitoring.
- MU01 (S3.043), MU02 (S3.007), MU03 (S3.039), MU04 (S3.033), and MU05 (S3.023) – These five discharge points drain into a Class 2 wetland, contiguous to Muddy Brook. The points are located on Eagle Drive and along the western edge of the area known as “The Valley” located within the airport boundary. The wetland is conveyed to a closed drainage system with discharge to Muddy Brook at DO18. The discharge point designations MU0X are part of two Permits: 3845-INDS.A and 3028-9010.A.
- PO01 (S2.001), PO02 (S3.001), PO05 (S2.020), PO06 (S2.033), and PO07 (no number) – These five discharges drain to a Class 2 wetland, contiguous with a tributary to Potash Brook. Potash Brook drains to Lake Champlain. These outfalls are located at the southern end of the site, and are part of Permit 3028-

**Burlington International Airport
Stormwater Pollution Prevention Plan (SWPPP)
April 1, 2012**

INDS.A, except discharge point PO02, which is covered under BTV's MS-4 Permit. PO05 is also a sampling point for benchmark monitoring. It is noted that discharge point PO01 has been plugged and buried, and no longer serves as a discharge point for stormwater.

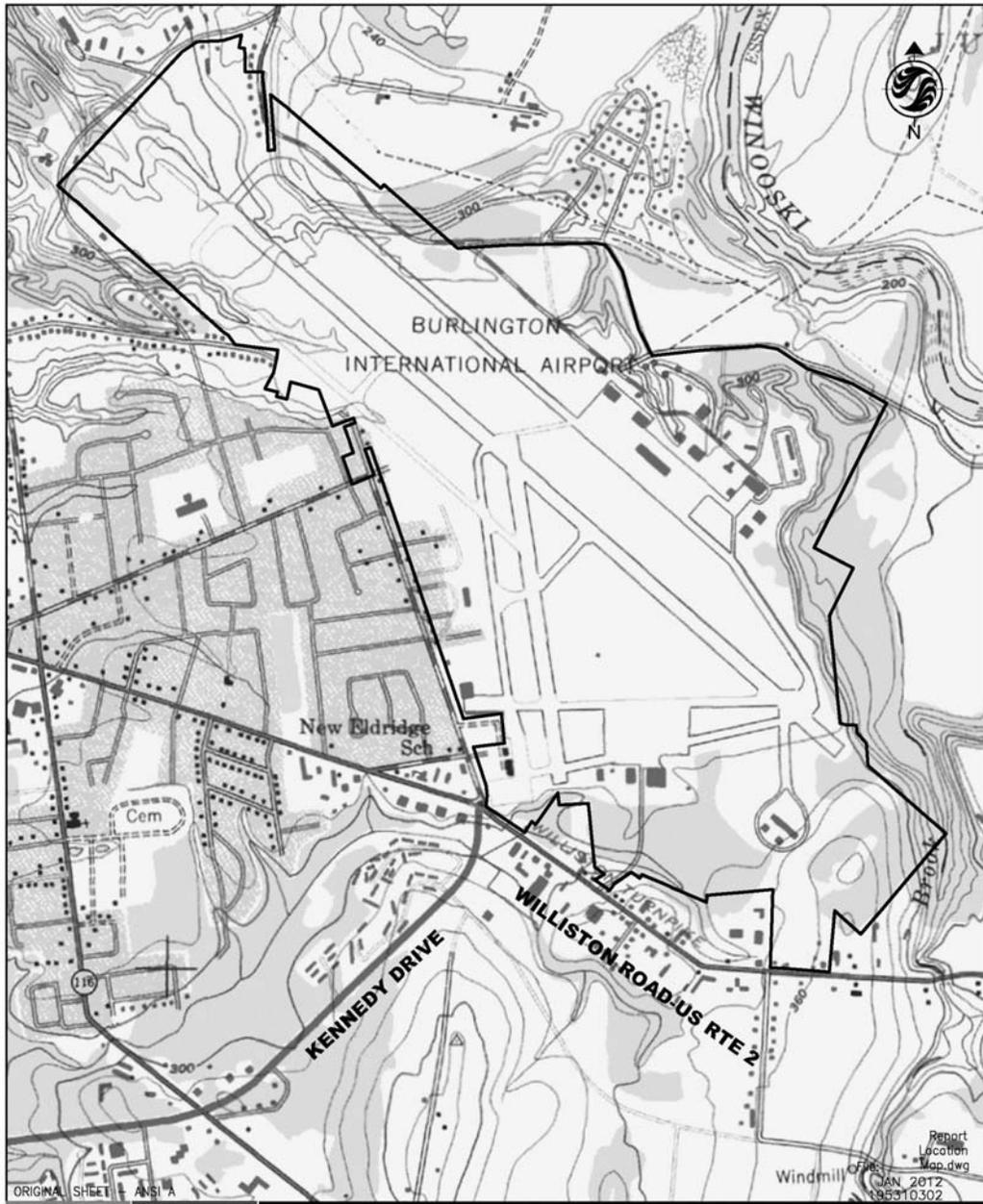
- NG001-P (S6.016), NG002-N (S6.008), NG003-O (S6.005.0), and NG004-M (S6.001) – these four stormwater outfalls discharge to an unnamed tributary of the Winooski River, which in turn discharges to Lake Champlain. They are located at the northern end of the site, near National Guard Avenue. These discharge points are part of Permit 3028-INDS.1.
- SW001 – This outfall is located at an unnumbered drainage structure located at the easterly corner of Williston Road and Airport Drive, just outside the airport property. The stormwater exits S2.036 located within the airport, and enters the City of South Burlington stormwater system at the unnumbered catch basin. The discharge is associated with BTV's MS-4 Permit.

Under the MSGP, the facility is categorized by Standard Industrial Classification (SIC) Code 4581 (Air Transportation Facilities) and falls under Sector S classification (Air Transportation).

As part of the facility's MSGP, MS-4, UIC, and operational Stormwater Discharge Permit conditions, BTV continues to implement stormwater monitoring, groundwater monitoring, and drainage structure inspection programs.

**Burlington International Airport
Stormwater Pollution Prevention Plan (SWPPP)
April 1, 2012**

3.3 General Location Map



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Client/Project
BURLINGTON INTERNATIONAL AIRPORT
MSGP PERMIT

Figure No.
1.0
Title
**PROJECT
LOCATION MAP**

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**Burlington International Airport
Stormwater Pollution Prevention Plan (SWPPP)
April 1, 2012**

3.4 BTV Facility Site Map

See the attached plan entitled *Burlington International Airport, Multi-Sector General Permit (MSGP) Site Drainage Map* dated April 1, 2012 for locations of all labeled outfalls, water courses, wetlands, buildings, BMP's and PPS's.

3.5 Description of Receiving Waters

Receiving Water Name: Unnamed tributary to Winooski River and Muddy Brook

Discharge Points flowing to this receiving water: D018 (S4.001), Q001A (S1.001), NG001-P (S6.016), NG002-N (S6.008), NG003-O (S6.005.0), and NG004-M (S6.001)

Applicable Vermont Water Quality Standards for Class B Cold Water Fish Habitat:

- Turbidity: not to exceed 10 NTU
- Dissolved Oxygen: not less than 7 mg/l and 75% saturation at all times
- Escherichia coli: not to exceed 77 organisms/100 ml
- Total increase from ambient temperature: not to exceed 1.0 °F
- Phosphorus: not to exceed 0.01 mg/l
- Nitrogen: not to exceed 5.0 mg/l as NO₃-N at flows exceeding low median monthly flows
- pH: maintain within the range of 6.5 and 8.5
- All other applicable standards for Class B, cold water fish habitat waters

Receiving Water Name: Class 2 Wetland W1 (3.16 acre area) contiguous to Potash Brook, and Class 2 Wetland W2 (7.03 acre area) contiguous to Muddy Brook.

Discharge Points flowing to this receiving water: P001 (S2.001), P005 (S2.020), P006 (S2.033), P007 (S2.036), and MU01 (S3.043), MU02 (S3.007), MU03 (S3.039), MU04 (S3.033), MU05 (S3.023).

Applicable Vermont Water Quality Standards for Class B Warm Water Fish Habitat:

- Turbidity: not to exceed 25 NTU
- Dissolved Oxygen: not less than 5 mg/l and 60% saturation at all times
- Escherichia coli: not to exceed 77 organisms/100 ml

**Burlington International Airport
Stormwater Pollution Prevention Plan (SWPPP)
April 1, 2012**

- Total increase from ambient temperature:

| <i>Ambient temperature</i> | <i>Total allowable increase above ambient</i> |
|----------------------------|-----------------------------------------------|
| Above 66 °F | 1.0 °F |
| 63 to 66 °F | 2.0 °F |
| 59 to 62 °F | 3.0 °F |
| 55 to 58 °F | 4.0 °F |
| Below 55 °F | 5.0 °F |

- Phosphorus: not to exceed 0.01 mg/l
- Nitrogen: not to exceed 5.0 mg/l as NO₃-N at flows exceeding low median monthly flows
- pH: maintain within the range of 6.5 and 8.5
- All other applicable standards for Class B, warm water fish habitat waters

Impaired Status: According to the *State of Vermont 2010 303(d) List of Impaired Waters*, both Potash Brook and Muddy Brook have been previously identified as impaired by DEC. Potash Brook, included in Part D of the list, is now considered a surface water with a completed and approved TMDL, and therefore is now outside the scope of Clean Water Act Section 303(d). The lower seven miles of Muddy Brook are listed by DEC as impaired because of nutrients, temperature, and toxics. Unnamed tributaries of the Winooski River, located within the vicinity of BTV, are not designated as impaired. A summary of primary watersheds contained within the BTV site is presented in Table 2 below:

**Burlington International Airport
Stormwater Pollution Prevention Plan (SWPPP)
April 1, 2012**

Table 2: Watershed Drainage Summary

| <i>Watershed Area</i> | <i>Stormwater Flow Description</i> | <i>Total Area (acres)</i> | <i>Impervious surface area (%)</i> | <i>Runoff Coefficient</i> | <i>Drainage Discharge Point</i> | <i>Drainage Name</i> |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------|---------------------------|-------------------------------------------------------------------------------------------|-------------------------------------|
| AREA 1 | Vermont Army National Guard Aviation Support Facility. SWPPP prepared by others, not part of this document. | 0.0 BTV 29.2 VTARNG | 46.6 | High | Unnamed | Unnamed tributary to Winooski River |
| AREA 2 | Sheet flow from runway and taxiways at the north end of the site and ditch flow to the stormwater inlets to NG001-P (S6.016), NG002-N (S6.008), NG003-O (S6.005.0) and NG004-M (S6.001). | 50.4 BTV 52.1 VTANG | 26.8 BTV | High | Groundwater & NG001-P (S6.016), NG002-N (S6.008), NG003-O (S6.005.0) and NG004-M (S6.001) | Unnamed tributary to Winooski River |
| AREA 3 | Vermont Air National Guard installation. SWPPP prepared by others, not part of this document. | 32.7 BTV 183.1 VTANG | 19.0 BTV | High | Unnamed | Muddy Brook |
| AREA 4 | Sheet flow from runway and adjacent grassed area to an on-site infiltration system. | 2.4 | 25.0 | High | Groundwater | N/A |
| AREA 5 | Sheet flow from runway and adjacent grassed area to an on-site infiltration system. | 10.4 BTV 5.9 VTANG | 26.9 BTV | High | Groundwater | N/A |
| AREA 6 | Parking area/Airport Terminal: sheet flow across paved areas to storm inlets to stormwater detention and infiltration systems, which discharge to Q001A or infiltrate. Sheet flow from runways and adjacent grassed areas infiltrate or discharge to stormwater system discharging to Q001A. | 145.3 | 34.1 | High | Groundwater & Q001A (S1.001) | Unnamed tributary to Winooski River |
| AREA 7 | Sheet flow from runways and taxiways and adjacent grassed areas to two (2) on-site infiltration systems. No discharge. | 13.1 | 48.9 | High | Groundwater | N/A |

**Burlington International Airport
Stormwater Pollution Prevention Plan (SWPPP)
April 1, 2012**

Table 2: Watershed Drainage Summary

| <i>Watershed Area</i> | <i>Stormwater Flow Description</i> | <i>Total Area (acres)</i> | <i>Impervious surface area (%)</i> | <i>Runoff Coefficient</i> | <i>Drainage Discharge Point</i> | <i>Drainage Name</i> |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| AREA 8 | Runoff from pervious areas between runways at the center of the site to infiltration areas. No discharge. | 11.8 | 6.8 | High | Groundwater | N/A |
| AREA 9 | Stormwater runoff sheet flow, shallow concentrated flow and ditch flow from: - Building 35 and adjacent paved and grassed areas downslope to MU01 (S3.043) - Buildings 15, 16, 22, adjacent ramps, other paved areas, and grassed areas to MU02 (S3.007) - Roof drainage flow from Building 17 and sheet flow from surrounding grassed areas to bio-retention basin (S3.018.0) - Sheet flow from the Valley West Apron to trench drain, pump station, and infiltration field (S3.021) - Sheet flow from buildings 23 – 30 and adjoining ramps, taxiways, and grassed areas to MU3 (S3.039) and MU4 (S3.033) - Sheet flow from roads, parking lots, and buildings to MU05 (S3.023). - Sheet flow from runway, ramps, other paved areas, and along ditch lines to DO18 (S4.001) - Discharge points MU01 – MU05 exit the site through DO18. | 155.4 | 34.2 | High | MU01 (S3.043) MU02 (S3.007) Ret. Basin (S3.018.0) Infiltra. Field (S3.021) MU03 (S3.039) MU04 (S3.033) MU05 (S3.023) DO18 (S4.001) | Muddy Brook |
| AREA 10 | Sheet flow from SD Ireland sand and gravel quarry, contained in the quarry with stone berms; no discharge | 27.7 | 88.4 | High | No discharge offsite | N/A |

**Burlington International Airport
Stormwater Pollution Prevention Plan (SWPPP)
April 1, 2012**

Table 2: Watershed Drainage Summary

| <i>Watershed Area</i> | <i>Stormwater Flow Description</i> | <i>Total Area (acres)</i> | <i>Impervious surface area (%)</i> | <i>Runoff Coefficient</i> | <i>Drainage Discharge Point</i> | <i>Drainage Name</i> |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------|
| AREA 11 | - Sheet flow from Carpentry Shop (Bldg 18)/Aviatron (Bldg 19) over bank to wetland - Sheet flow from runway, taxiway, and other paved and grassed areas into two (2) infiltration chambers and to PO01 (S2.001) - Sheet flow from paved surfaces near Maintenance Shop (Bldg 14) to PO02 (S3.001) - Sheet flow from runway, taxiway, and other paved and grassed areas into an infiltration chamber and to PO05 (S2.020) - Sheet flow across the Heritage West apron to PO06 (S2.033) - Collection from unknown source(s) to PO07 | 70.3 | 48.9 | | Wetland W2 PO01 (S2.001) PO02 (S3.001) PO05 (S2.020) PO06 (S2.033) PO07 (no number) | Potash Brook |
| AREA 12 | Sheet flow from lawn area to City Stormwater System | 0.5 | 7.1 | High | City of South Burlington | Stormwater System |
| AREA 13 | Sheet flow from concrete surfaces into a trench drain, to a swirl concentrator, to on-site discharge | 2.9 | 96.6 | High | Groundwater | N/A |
| AREA 14 | Sheet flows from parking lot and roads, and adjoining grassed areas to City of South Burlington Stormwater System | 0.9 | 66.7 | High | City of South Burlington | Stormwater System |
| AREA 15 | Sheet flows from parking lot, roads, buildings, and adjoining grassed areas to City of South Burlington Stormwater System | 3.7 | 64.9 | High | City of South Burlington | Stormwater System |
| AREA 16 | Sheet flow from paved long term and employee parking areas to exfiltrating sand filter S1.016.2.1 | 5.9 | 88.1 | High | Exfiltrating Sand Filter | N/A |
| TOTAL AREA | SWPPP FOR BTV ONLY | 533 BTV | N/A | HIGH | VARIES | VARIES |

3.6 Precipitation Information

Average annual precipitation: According to data provided the National Weather Service, the average annual precipitation for western Vermont is 39 inches.

Wettest months: June, July, August, and September

Expected rainfall in the wettest month: 4.29 inches (August)

Types/intensity of storms: The following table shows the rainfall depths associated with various storm events in Chittenden County, Vermont.

| Table 3: Rainfall Depths (inches) Associated with the 1-Year, 2-Year, 10-Year, and 100-Year, 24-Hour Storm Event in Chittenden County, Vermont | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------|----------------------|
| 1-yr, 24-hr | 2-yr, 24-hr | 10-yr, 24-hr | 100-yr, 24-hr |
| 2.1 | 2.3 | 3.2 | 5.2 |

How are industrial activities affected by changing precipitation and temperature? Industrial activities on the site are not substantially affected by changes in precipitation or temperature patterns.

3.7 Inventory of Exposed Materials and Potential Pollutant Sources

Table 4 on the next page summarizes activity areas and potential pollutant sources (PPS's) at BTV.

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| Table 4: Inventory of Site Areas and Activities Exposed to Stormwater | | | | |
|------------------------------------------------------------------------------|---------------------------------------|------------------------------|---------------------------------------------------------------------------|-------------------------------------------------|
| Map Key | Activity/ Area of the Facility | Significant Materials | Amount (Approx.) | Discharge Point |
| PPS1 | Deicing area | Propylene glycol | Minimal to small amounts from airport terminal gates | Q001A (S1.001) |
| | | Sodium formate | | |
| | Aircraft fueling operations | Benzene | Potential for spill at each fueling operation | Q001A (S1.001) |
| | | Ethyl benzene | | |
| | | Toluene | | |
| xylene | | | | |
| MTBE | | | | |
| PPS2 | Deicer area | Propylene glycol | Approximately 1,800 gallons/year | P005 (S2.020) |
| | | Sodium Formate | | |
| PPS3 | Deicing storage | Propylene glycol | Above ground storage tanks | P005 (S2.020) |
| | | Sodium Formate | | |
| PPS4 | Aircraft fueling operations | Benzene | Potential for spill at each fueling operation | PO05 (S2.020) |
| | | Ethyl benzene | | |
| | | Toluene | | |
| | | xylene | | |
| | | MTBE | | |
| PPS5 | Old Equipment Storage | Oil | Minor leakage possible of petroleum products from idle equipment | P001 (S2.001) |
| | | Grease | | |
| | | Heavy metals | | |
| PPS6 | Gas/fuel pump | Benzene | 10,000 gallon and 2,000 gallon underground tanks; minimal spill potential | Pumped to municipal wastewater treatment system |
| | | Ethyl benzene | | |
| | | Toluene | | |
| | | xylene | | |
| | | MTBE | | |
| PPS7 | Contaminate storage for waste fuel | Benzene | 500 gallon above-ground storage tank; minimal spill potential | Pumped to municipal wastewater treatment system |
| | | Ethyl benzene | | |
| | | Toluene | | |
| | | Xylene | | |
| | | MTBE | | |
| PPS8 | Deicing | Propylene glycol | Approximately 600 gallons | D018 (S4.001) |
| | | Sodium formate | | |
| | Aircraft fueling operations | Benzene | Potential for spill at each fueling operation | D018 (S4.001) |
| | | Ethyl benzene | | |
| | | Toluene | | |
| xylene | | | | |
| MTBE | | | | |
| PPS9 | Sand/gravel/mulch stock piles | Sediment | | D018 (S4.001) |

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| Table 4: Inventory of Site Areas and Activities Exposed to Stormwater | | | | |
|------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------|------------------|
| Map Key | Activity/ Area of the Facility | Significant Materials | Amount (Approx.) | Discharge Point |
| PPS10 | Fuel Transfer Station Jet-A and AFGAS fuel storage | Benzene | 3 above ground storage tanks at 25,000 gal each plus 1 at 12,000 gal = 87,000 gallons | D018 (S4.001) |
| | | Ethyl benzene | | |
| | | Toluene | | |
| | | xylene | | |
| | | MTBE | | |
| PPS11 | Deicing storage | Propylene glycol | Storage no longer takes place at this location and tanks have been removed | D018 (S4.001) |
| | | Sodium Formate | | |
| PPS 12 | Deicing | Propylene glycol | Approximately 600 gallons | D018 (S4.001) |
| | | Sodium Formate | | |
| | Aircraft fueling operations | Benzene | Potential for spill at each fueling operation | D018 (S4.001) |
| | | Ethyl benzene | | |
| | | Toluene | | |
| | | xylene | | |
| | | MTBE | | |

Table 5 below provides a summary of potential pollutant materials used on site.

| Table 5: Significant Materials Used Onsite | | |
|---------------------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------|
| <i>Trade Name Material</i> | <i>Chemical/ Physical Description</i> | <i>Stormwater Pollutants</i> |
| Hydraulic fluids | Brown oily petroleum Hydrocarbon | Mineral oil |
| Brake fluid | Ethylene glycol-based syrup liquid | Ethylene glycol |
| Antifreeze/coolant | Clear green/yellow liquid | Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc) |
| Oil recovered from steam cleaning | Brown oily water | Oil and grease, solids |
| Wastewater recovered from steam cleaning | Water | Oil and grease, solids |
| Gasoline | Colorless, pale brown or pink petroleum hydrocarbon | Benzene, ethyl benzene, toluene, xylene, MTBE |
| Jet – A fuel | Clear white or yellow liquid | Naptha, naphthalene, kerosene |
| Degreasing solvents | Colorless or white liquid | Trichloroethylene, trichloroethane, perchloroethylene |
| Paint | Various colored liquids | Stoddard solvent, naphtha, bisphenol, arsenic |
| Deicing materials | White powder or colored oily liquid | Propylene glycol, sodium formate |
| Lubricants | Amber liquid or brown paste | Kerosene, mineral oil, petroleum distillates |
| Fertilizers | Liquid or solid granules | Nitrogen, phosphorus |
| Herbicides and pesticides | Various colored to colorless liquids, powder, pellets, or granules | Chlorinated hydrocarbons, arsenic, organophosphates, carbonates, |

3.8 Inventory of Past Spills and Leaks

An inventory of past spills and leaks is presented in Table 6 below.

| Date | Table 6: Past Spills and Leaks | | | Discharge Point |
|----------------------|-----------------------------------------------------------------------------------------|-------------|-------------|-----------------------------------------------------------------------------------------|
| | Nature of Spill | | | |
| | Source / Cause of Spill | Material | Quantity | |
| 12/13/2010 WMD606 | Diesel fuel spill – snow removal vehicle backed into other vehicle at Maintenance Bldg. | Diesel fuel | 100 gallons | Release contained and cleaned up by hazmat team; some over embankment toward wetland. |
| 5/18/2009 WMD234 | Jet fuel spill – overfill during refueling | Jet-A Fuel | 30 gallons | Released to concrete pad with no drains in vicinity. All product collected and drummed. |
| 1/10/2007 WMD018 | Diesel fuel spill to blacktop | Diesel fuel | 20 gallons | Spill to blacktop. EP&S collected and drummed produce. |

4.0 Non-Stormwater Discharges

4.1 Certification of Non-Stormwater Discharges

A description of non-stormwater discharge testing and certification can be found in Worksheet 1, Appendix A at the end of this document. Outfalls which could not be evaluated are listed in Worksheet 2, Appendix A.

4.2 Allowable Non-Stormwater Discharges

BTV has no allowable non-stormwater discharges as authorized per MSGP Section 1.2.3.

5.0 Best Management Practice (BMP) Identification

5.1 Source Protection BMPs

Stormwater controls and BMPs to prevent or control pollutants in stormwater discharges from the site have been selected with the following considerations: appropriateness for identified potential pollutant sources, feasibility of on-site implementation, and cost.

Good Housekeeping

Good housekeeping practices will be implemented to minimize the risk of stormwater contact with potential pollutant sources by keeping exposed areas clean and orderly. Good housekeeping practices to be implemented at the site include, but are not limited to, the following:

- Store contained fluid indoors (maintenance buildings) whenever feasible
- Maintain an organized inventory of materials used in maintenance buildings
- Perform all maintenance activities inside maintenance buildings
- Park vehicles with any detected fluid leaks inside maintenance buildings and repair
- Ensure that all outdoor dumpsters, trash cans, and other waste containers are adequately covered
- Recycle, or properly dispose of waste materials regularly in approved fashion.
- Do not dispose of waste materials in unapproved areas (e.g., do not pour waste fluids down storm drains, in sewer system, or on the ground)
- Store potential pollutants (i.e., fuels, oils, paints, hydraulic fluids, etc.) in maintenance buildings in appropriate, sealed, and labeled containers
- Regularly maintain and inspect all vehicles
- Include the inspection of all containers, drums, and tanks stored outdoors as part of the routine facility inspection

Minimize Exposure

In order to minimize exposure, ensure that industrial vehicles and equipment that are stored outdoors are regularly maintained and inspected for leaks. All hazardous materials will continue to be handled and stored within the maintenance buildings, and waste materials disposed of promptly and properly. As a general practice, potential pollutants will not be handled outdoors during precipitation events.

Preventative Maintenance

All facility equipment will be inspected monthly and receive regular maintenance, as needed, to prevent system failures and compromised performance that could potentially cause contamination of stormwater runoff.

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Spill Prevention and Response

The risk of potential pollutant releases will be reduced by the following measures:

- Hazardous material handling procedures will be followed by all personnel, and specific training will be provided
- Absorptive materials will be placed beneath aircraft during fueling operations
- Storage containers will be regularly inspected and maintained, as needed (see Section 5.1 Routine Inspections).
- Emergency spill kits will be available where materials are commonly handled (Maintenance buildings)
- Material handlers will be trained in spill prevention and response procedures, including the spill response instructions Hazardous Material Spill Response Environmental Fact Sheet (see Section 5.2 Spill Response).

5.1.1 Area Specific BMPs

5.1.1.1 Runway Deicing

| BMP | Implementation Date | Responsible Party |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------|
| Evaluate current chemical application rates to avoid over-application. | Summer 2007/ ongoing | BTV |
| Install devices to meter the amount of chemical applied to runways. | Ongoing | BTV |
| Continue to maintain runway ice detection (RID) system or pavement sensor to monitor runway temperatures and inform operators when temperatures are approaching freezing conditions. This increases the likelihood of timely and effective deicing operations. | Installed and in use | BTV |
| When possible, avoid applying deicing chemicals under extreme cold and dry conditions, which make it difficult for the chemicals to adhere to the ice surface. | October-April annually | BTV |
| Consider “pre-wetting” deicing chemicals to improve the adhesion to the iced surface and increase the efficiency rate of the application. | Previously evaluated and deemed not feasible | BTV |
| Pre-treat or promptly treat surfaces to inhibit the strong bonding of ice. | October 2007/ ongoing | BTV |
| Use drain blocks to separate deicing chemicals from storm drains. | October 2007/ ongoing | BTV |
| Route planes to designated deicing areas. | October 2007/ ongoing | BTV |
| Construct additional subsurface infiltration systems. | October 2007 / ongoing | BTV |

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5.1.1.2 Aircraft Deicing (Main Apron, NOTE 2 Apron, and Valley West Apron)

| BMP | Implementation Date | Responsible Party |
|------------------------------------------------------------------------------------------------|----------------------------|--------------------------|
| Evaluate chemical application rates to avoid over-application. | October 2007 | BTV |
| Implement and monitor ADF Infiltration System, adhering to specification in UIC permit #6-0075 | May 2007 /ongoing | BTV |
| Implement and monitor ADF Infiltration System, adhering to specification in UIC permit #6-0084 | 2009 /ongoing | BTV |

5.1.1.3 Aircraft Deicing (other deicing areas)

| BMP | Implementation Date | Responsible Party |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------|
| Evaluate chemical application rates to avoid over-application. | October 2007/ ongoing | BTV |
| Continue to use Type I and Type II deicing fluids (ADF) when longer holdover times are not a concern. Type I and II contain lower concentrations of additives. | Implemented | BTV |
| Purchase ADFs that use environmentally benign or less toxic chemicals and additives | Summer 2007/ ongoing | BTV |
| Consider mechanical deicing technologies such as boot de-icing and electrical restive heating. | Ongoing | BTV |
| Consider a computerized spraying system to reduce the volume of ADFs used as well as the time needed for deicing. This can increase the efficiency of ADF collection. | Ongoing | BTV |
| Continue spraying ADFs from truck-mounted booms to deliver more fluid to the target area from a closer range, in order to reduce overspray and waste. | Already implemented by Heritage/ongoing | BTV |
| Consider using ice detection systems and sensors to determine if deicing is necessary. | Ongoing | BTV |

5.1.1.4 Managing Glycol Solutions

| BMP | Implementation Date | Responsible Party |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------|
| Continue to consider air temperature when preparing glycol solutions (i.e., “blend to temperature”). | Already implemented | BTV |
| Avoid applying glycol-based deicers near storm drains. | Summer 2007 | BTV |
| Follow manufacturers’ recommendations when preparing and applying ADFs. | Summer 2007 | BTV |
| Properly maintain spreading equipment to increase efficiency and reduce the potential for over-application. | Summer 2007 | BTV |
| Consider using a vacuum truck to recycle glycol. Fluids containing as little as 5% glycol can be recycled. | Previously evaluated and determined not feasible | BTV |

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5.1.1.5 Aircraft, Vehicle, and Equipment Maintenance and Cleaning Areas

| BMP | Implementation Date | Responsible Party |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------|
| Continue to conduct all maintenance and cleaning activities indoors or in a designated, contained area. Prohibit such activities outside of these areas. | May 2007/ongoing | BTV |
| Use drip pans under all aircraft, vehicles, and equipment waiting for maintenance. | May 2007/ongoing | BTV |
| Maintain an organized inventory of all chemicals and materials. | May 2007/ongoing | BTV |
| Provide secondary containment for fuels and hydraulic fluids (e.g., store containers in tubs or buckets). | May 2007/ongoing | BTV |
| Drain all parts prior to disposal. | May 2007/ongoing | BTV |
| Do not pour liquid waste down floor drains, sinks, or storm drains. | May 2007/ongoing | BTV |
| Properly dispose of greasy rags, oil filters, air filters, batteries, spent coolant, degreasers, and similar products. Promptly transfer used fluids to a designated appropriate storage container. | May 2007/ongoing | BTV |
| Store used batteries in a leak-proof, noncorrosive container prior to proper disposal. | May 2007/ongoing | BTV |
| Use dry cleanup methods for apron and hangar floor. | May 2007/ongoing | BTV |
| Direct stormwater from maintenance and cleaning areas to treatment areas. | May 2007/ongoing | BTV |
| Fuel vehicles on impervious surfaces and use funnels and drip pans to reduce spillage. | May 2007/ongoing | BTV |
| Wash vehicles indoors. | May 2007/ongoing | BTV |
| Use only phosphorus-free soaps. | May 2007/ongoing | BTV |
| | | |

5.1.2 Site-wide BMPs

| BMP | Implementation Date | Responsible Party |
|-----------------------------------------------------------------------------------------------------------|----------------------------|--------------------------|
| All spills will be cleaned up immediately using dry methods. Spill areas are never washed down with water | May 2007/ongoing | BTV |
| Catch basins will be cleaned out every year. | May 2007/ongoing | BTV |
| Trash containers and dumpsters will be tightly covered when not in use | May 2007/ongoing | BTV |
| Trash will be picked up every week. | May 2007/ongoing | BTV |
| Grass cover will be maintained in vegetated areas to aid infiltration of runoff. | May 2007/ongoing | BTV |
| Continue regular maintenance of subsurface infiltration system. | May 2007/ongoing | BTV |
| Store only well-maintained planes and vehicles outdoors. | May 2007/ongoing | BTV |
| Store snow only on grass areas, and avoid storing near stormwater drainage areas. | Ongoing | BTV |

5.2 Spill Response

The SWPPP will be modified within 14 days of knowledge of a spill to include information regarding the nature, date, and cause of the release. The plan will be modified with measures to prevent reoccurrence and to improve response.

Specifically, the following procedures will be followed:

1. Assess the Hazard and Perform Initial Response

For spills that can be safely managed without assistance:

- Stop the spill at its source;
- Prevent spilled material from entering storm drains, waterways, drainage ditches, etc;
- Contain spilled material using a barrier (absorbent pads or socks), temporary dike or trench.

For all other spills, a cleanup contractor will likely need to be hired since they have the training and equipment necessary to safely respond to dangerous hazardous material spills.

2. Report the Spill

Any hazardous material spill to the land or water that meets the following criteria must be immediately reported to the Department of Environmental Conservation (DEC) Spill Response Team (spill team) by calling the **24-hour Hazardous Materials Spills Hotline at 1-800-641-5005**. *If there is any question about whether a spill is reportable, call.*

- A spill of 2 gallons or more;
- A spill that is less than 2 gallons, but poses a threat to human health or the environment (for example, a gallon of gasoline spilled to a wetland); or
- A spill that exceeds a CERCLA reportable quantity.

Any person who has knowledge of a spill and who may be subject to liability for that spill, is responsible for reporting the spill. In addition to reporting to the DEC, any spill of hazardous material that impacts (or threatens) surface water (e.g., lakes, streams, wetlands) must also be reported to the U.S. Coast Guard via the National Response Center at **1-800-424-8802**.

3. Clean up and Follow up

- Ensure that the spill is cleaned up to the extent that it no longer presents a threat to human health or the environment;
- Make a hazardous waste determination for all spill cleanup materials;
- Ensure that contaminated soil/water/debris is collected and managed appropriately;
- **For any reportable spill, submit a written follow-up report within 10 days detailing how the spill was cleaned up and how waste was managed.**

5.3 Vehicle and Equipment Washing

All BTV-owned vehicle washing and equipment washing is conducted indoors. Rental car washing discharges to the municipal sewer system (see Section 4.2).

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If there is ever a hazardous spill to a floor drain or to the ground and there is a potential for groundwater contamination or the contents of a holding tank is in question, the Hazardous Spills Hotline (1-800-641-5005) will be contacted for assistance.

5.4 *Sediment and Erosion Control*

Prior to beginning construction project disturbing greater than one acre the facility will contact the VT ANR at (802)241-4320 to determine if a construction general permit (CGP) is necessary.

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5.5 Structural BMPs

| | |
|------------------------------------|-------------------------------------------------------------------------------------------------|
| <u>BMP 1</u> | |
| <u>Structure:</u> | Vortechincs Swirl Concentrator Device: Permit #3028-9010.A, S/N 001, formerly Permit #3972-9015 |
| <u>Date of Implementation:</u> | Existing |
| <u>Discharge Point:</u> | Q001A (Stantec S1.000) |
| <u>Area(s) Treated:</u> | Area 6 |
| <u>Pollutants Removed:</u> | Nutrients, glycol, and sediment |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly during de-icing season. |

| | |
|------------------------------------|------------------------------------------------------------------------------------------------------|
| <u>BMP 2</u> | |
| <u>Structure:</u> | Vortechs/Stormtech Treatment System, Permit #3028-9010.A, Note 2, S/N002, formerly Permit #3972-9015 |
| <u>Date of Implementation:</u> | Existing |
| <u>Discharge Point:</u> | Groundwater via infiltration chamber (Stantec S1.023.3) and overflow to Q001A (Stantec S1.000) |
| <u>Area(s) Treated:</u> | Area 6 |
| <u>Pollutants Removed:</u> | Nutrients, sodium formate, glycol, and sediment |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly during de-icing season. |

| | |
|-------------------------------------------|---------------------------------------------------------------------------|
| <u>BMP 3</u> | |
| <u>Structure:</u> | Infiltration Trench Area, UIC Permit #6-0075 – Main Apron & NOTE 2 System |
| <u>Date of Implementation:</u> | 2007 (completed) |
| <u>Discharge Point:</u> | Infiltration to groundwater |
| <u>Area(s) Treated:</u> | Area 6 |
| <u>Pollutants Removed:</u> | Nutrients, sodium formate, glycol, and sediment |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal, maintain vegetated area | When needed |
| Inspection | Monthly during de-icing season. |

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BMP 4

Structure: Vortechincs Swirl Concentrator Device, Permit #1-1391, S/N 001
Date of Implementation: Existing
Discharge Point: P005 (Stantec S2.020)
Area(s) Treated: Area 13
Pollutants Removed: Nutrients, glycol, and sediment

| | |
|------------------------------------|-------------------------------------------------------------------|
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly during de-icing season, one quarterly inspection in July. |

BMP 5

Structure: Oil & Grit Separator
Date of Implementation: 2003
Discharge Point: Municipal Wastewater System
Area(s) Treated: Area 11
Pollutants Removed: Nutrients, oil, glycol, and sediment

| | |
|------------------------------------|-------------------|
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly |

BMP 6

Structure: Exfiltrating Sand Filter, Permit #3028-9010.A, S/N 004, formerly Permit # 1-1580
Date of Implementation: 2003
Discharge Point: Q001A (Stantec S1.000)
Area(s) Treated: Area 6
Pollutants Removed: Nutrients, sediment

| | |
|------------------------------------|---------------------------------|
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly during de-icing season. |

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BMP 7

Structure: Infiltration Chambers (2 locations, subsurface) Permit #1-0839.

Date of Implementation: 2007

Discharge Point: Infiltration – groundwater

Area(s) Treated: Area 11

Pollutants Removed: sodium formate, sediment

Maintenance Requirement(s):

Frequency:

Sediment removal, maintain vegetated area
Inspection

When needed
Monthly during de-icing season, one quarterly
inspection in July.

BMP 8

Structure: Infiltration Chambers (2 locations, subsurface) Permit #3028-
INDS.1, S/N 004.

Date of Implementation: 2007

Discharge Point: Infiltration – groundwater

Area(s) Treated: Area 7

Pollutants Removed: sodium formate, sediment

Maintenance Requirement(s):

Frequency:

Sediment removal, maintain vegetated area
Inspection

When needed
Monthly during de-icing season, one quarterly
inspection in July.

BMP 9

Structure: Infiltration Chambers (subsurface) Permit #3028-INDS.1, S/N 007.

Date of Implementation: 2007

Discharge Point: Infiltration – groundwater

Area(s) Treated: Area 4

Pollutants Removed: sodium formate, sediment

Maintenance Requirement(s):

Frequency:

Sediment removal, maintain vegetated area
Inspection

When needed
Monthly during de-icing season.

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BMP 10

Structure: Infiltration Chambers (subsurface) Permit #3028-INDS.1, S/N 006.

Date of Implementation: 2010

Discharge Point: Infiltration – groundwater

Area(s) Treated: Area 5

Pollutants Removed: sodium formate, sediment

Maintenance Requirement(s):

Frequency:

Sediment removal, maintain vegetated area

When needed

Inspection

Monthly during de-icing season.

BMP 11

Structure: Infiltration Chambers (subsurface) Permit #3028-INDS.1, S/N 001.

Date of Implementation: 2010

Discharge Point: Detention – groundwater

Area(s) Treated: Area 6

Pollutants Removed: sodium formate, sediment

Maintenance Requirement(s):

Frequency:

Sediment removal, maintain vegetated area

When needed

Inspection

Monthly during de-icing season.

BMP 12

Structure: Infiltration Chambers (subsurface) Permit #3028-INDS.1, S/N 002.

Date of Implementation: 2010

Discharge Point: Detention – groundwater

Area(s) Treated: Area 2

Pollutants Removed: sodium formate, sediment

Maintenance Requirement(s):

Frequency:

Sediment removal, maintain vegetated area

When needed

Inspection

Monthly during de-icing season.

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BMP 13

| | |
|-------------------------------------------|------------------------------------------------------------------|
| <u>Structure:</u> | Infiltration Chambers (subsurface) Permit #3028-INDS.1, S/N 003. |
| <u>Date of Implementation:</u> | 2010 |
| <u>Discharge Point:</u> | Infiltration – groundwater |
| <u>Area(s) Treated:</u> | Area 2 |
| <u>Pollutants Removed:</u> | sodium formate, sediment |
| | |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal, maintain vegetated area | When needed |
| Inspection | Monthly during de-icing season. |

BMP 14

| | |
|------------------------------------|-------------------------------------------------------------------------------------------|
| <u>Structure:</u> | Glycol Infiltration Field (subsurface) Permit #UIC 6-0084, South End Development, Phase 2 |
| <u>Date of Implementation:</u> | 2009 |
| <u>Discharge Point:</u> | Infiltration to groundwater |
| <u>Area(s) Treated:</u> | Area 9 |
| <u>Pollutants Removed:</u> | Nutrients, sodium formate, glycol, and sediment |
| | |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly during de-icing season. |

BMP 15

| | |
|-------------------------------------------|------------------------------------------------------------------------------------|
| <u>Structure:</u> | Bioretention Basin, Permit #3845-INDS.A, S/N 002, Heritage Flight Campus Expansion |
| <u>Date of Implementation:</u> | 2009 |
| <u>Discharge Point:</u> | MU01 (Stantec S3.043) |
| <u>Area(s) Treated:</u> | Area 9 |
| <u>Pollutants Removed:</u> | Nutrients, sediment |
| | |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal, maintain vegetated area | When needed |
| Inspection | Monthly during de-icing season. |

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| | |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <u>BMP 16</u> | |
| <u>Structure:</u> | Vortechincs Swirl Concentrator Device, Permit #3028-9010.A, S/N 008, formerly 4026-9015 – South End Development, Phase 2 |
| <u>Date of Implementation:</u> | 2009 |
| <u>Discharge Point:</u> | Groundwater via Glycol Infiltration Field (Stantec S3.021) and overflow to MU02 (Stantec S3.001) |
| <u>Area(s) Treated:</u> | Area 9 |
| <u>Pollutants Removed:</u> | Nutrients, sodium formate, glycol, and sediment |
| <u>Maintenance Requirement(s):</u> | <u>Frequency:</u> |
| Sediment removal | When needed |
| Inspection | Monthly during de-icing season. |

6.0 BMP Implementation

6.1 Routine Facility Inspections

Facility inspections will be performed by the Airport Engineer, or their designated representative. In order to maintain compliance with MSGP 3-9003 conditions, BTV's future monthly routine facility inspections will be performed as stated per guidance provided by VT ANR, Stormwater Program staff (ref. e-mail correspondence dated March 5, 2012):

- **During Deicing Season (October 15 to April 15)**
All BMP's and all PPS's will be inspected monthly during the deicing season.
- **During Non-deicing Season (April 16 to October 14)**
All PPS's will be inspected monthly during non-deicing season. BMP's do not require monthly inspection during this period other than those inspections that are required to satisfy inspection conditions included in operational Stormwater Discharge Permits.
- Monthly routine facility inspections performed during April and October will include all BMP's and PPS's.

If stormwater BMPs are found to be functioning incorrectly, maintenance will be performed before the next anticipated storm event, or as necessary to maintain effectiveness of the stormwater controls. A sample inspection form and records of past inspections will be kept in Appendix B of the SWPPP.

6.2 Employee Training

All employees will attend an annual training session. New employees will be trained within two weeks of hire. Records of attendance are to be kept with this plan using Appendix C found at the end of this plan.

Topics to be included in employee training:

- Introduce Pollution Prevention Team and discuss need for the SWPPP
- Spill response procedure
- Review of past spills
- Review of good housekeeping procedures
- Proper material handling procedures
- Proper disposal or recycling of materials
- Be sure employees know where cleaning materials and spill kits are located
- Review sources of stormwater pollutants used onsite
- Familiarize employees with drainage routes near areas where industrial materials are handled
- Proper handling (collection, storage, and disposal) of potential pollutants and hazardous materials
- Maintenance of structural BMPs

7.0 Monitoring Requirements

Ultimately, the goal of this SWPPP it is to protect the quality of water resources. To evaluate the effectiveness of the measures described here, the following monitoring activities will be conducted on the stormwater discharges at the Burlington International Airport. Monitoring results will be used to regularly reassess the impact of pollutant sources and the need for best management practices (BMPs). The SWPPP will be updated and improved throughout the term of the permit and these updates will be informed by the results of monitoring.

7.1 Quarterly Visual Monitoring

Each discharge point on the site will be examined each quarter by the Airport Engineer or their designated representative for evidence of contamination during a runoff event. Monitoring will take place within the first 30 minutes of a precipitation or snowmelt event if possible, but no more than 60 minutes after onset. Precipitation events must be greater than 0.1 inches in magnitude and occur at least 72 hours after the last runoff producing event. Results of quarterly visual monitoring will be found in Appendix D.

7.2 Benchmark Monitoring

Stormwater Monitoring

Benchmark monitoring will include ONLY those outfalls from the airport facility that collect runoff from areas where deicing activities occur (ref. SIC 4581). The deicing outfalls include: Q001A (Stantec S1.001), D018 (Stantec S4.001), and P005 (Stantec S2.020).

For the first year of permit coverage, four benchmark samples will be taken *during the deicing season* from all outfalls that collect runoff from deicing activities. This time period is defined as October 15-April 15. Periods for quarterly monitoring are therefore defined as follows:

- October 15 to November 31.
- December 1 to January 15.
- January 16 to February 28.
- March 1 to April 15.

This benchmark monitoring will be conducted for the parameters described in Table 9:

| Table 9: Benchmark Monitoring | |
|----------------------------------------------|---------------------------------------|
| Parameter | Benchmark Cutoff Concentration |
| Biological oxygen demand (BOD ₅) | 30 mg/L |
| Chemical oxygen demand (COD) | 120 mg/L |
| Ammonia | 2.14 mg/L |
| pH | 6.0-9.0 s.u. |
| | |

Sampling will occur during a storm event producing at least 0.1 inch of precipitation, and which occurred at least 72 hours after the last storm event. A single grab sample will be taken at each outfall during the first 30 minutes of the discharge. If sampling is not possible during the first 30 minutes, then the sample will be taken during the first hour of the discharge and the reason why sampling during the first half hour was infeasible will be documented.

Sampling will be collected by a qualified environmental professional and processed at Endyne, Inc. in Williston, VT using approved EPA methods. The results of all benchmark monitoring will be submitted to the Agency using a Discharge Monitoring Report (DMR). The samples results will be sent to the Agency no more than 60 days after sampling took place. A sample DMR and a copy of all monitoring reports will be kept in Appendix E of this document.

If the average of the four samples is less than the benchmark value, then the benchmark monitoring requirement has been met for the term of the permit. If the average of the four samples exceeds the benchmark cutoff concentration, then the SWPPP will be reviewed and corrective actions taken as described in section 3.2.2.4 of the MSGP. This includes continuing

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the sampling four times during the deicing season until the average of the four samples is below the benchmark cutoff concentration.

Groundwater Monitoring

Continue monitoring per the permit requirements for UIC permit #6-0075 (Aircraft De-icing Fluid Treatment Facility) and UIC permit #6-0084 (South End Development, Phase 2). Water quality sampling will be performed at specified on-site monitoring wells, and the water samples will be analyzed for the constituents listed in Table 10.

| Table 10: Proposed Monitoring Constituents | |
|---------------------------------------------------|---------------------------|
| Parameter | EPA Method |
| BOD ₅ | 401.5 |
| COD | 410.2 |
| Propylene glycol (PG) | SW 8015B |
| Chloride | 325.1 |
| Nitrate | 300.0 |
| Total dissolved solids | 160.1 |
| Alkalinity | 310.1 |
| pH | 150.1 |
| Conductivity | 120.1 (field measurement) |
| Temperature | 170.1 (field measurement) |
| | |

The primary groundwater quality standard that must be maintained at the compliance point is a BOD₅ concentration increase above background of no more than 25 mg/L.

Duration of Monitoring:

Groundwater sampling will be conducted at specified monitoring wells twice annually during October/ November and April/May, coinciding with late fall and spring base streamflow periods as indicated by the Winooski River USGS gage. Sampling in April/May is intended to capture spring runoff and the cumulative effect of winter de-icing operations. BTV initiated this groundwater quality monitoring in 2007. Groundwater sampling will continue under the new SWPPP twice annually until the average of the samples is below the benchmark cutoff concentrations.

Reporting:

A summary report describing the results of the monitoring will be prepared each year of monitoring. The report will provide a basis for establishing whether future changes in groundwater quality are attributable to the operation of the BTV infiltration system. These annual reports will be submitted to DEC in July of the year following sampling.

7.3 Effluent Limitations

There are no effluent limitations associated with BTV.

7.4 Monitoring Associated with Discharges to Impaired Waters

Potash Brook and Muddy Brook are both listed on the *State of Vermont 2010 303(d) List of Impaired Waters*. Potash Brook, included in Part D of the list, is now considered a surface water with a completed and approved TMDL. Muddy Brook is noted in Part A of the list. No TMDL has been approved to date for Muddy Brook.

Potash Brook is an impaired water with a TMDL that was approved by EPA on December 19, 2006. Therefore, no monitoring is necessary at this time unless the Secretary informs BTV otherwise at some time in the future. In the event that such notice is provided in the future, the Secretary's notice would include which pollutant to monitor and the required monitoring frequency.

Muddy Brook is an impaired water as it is listed on page 5 of 9 in the *State of Vermont, 2010, 303(d) List of Waters, Part A – Impaired Surface Waters In Need of TMDL*. Pollutants listed on the 303(d) list are “*Toxics, Nutrients, and Temperature*”. Per review and direction by VT ANR, Stormwater Program personnel, BTV is required to monitor the Muddy Brook outfall (DO18) annually for nutrients including Total Phosphorus and Total Nitrogen.

The following parameters will be monitored for Muddy Brook: Total Phosphorus and Total Nitrogen. Temperature is not required to be monitored. ; The samples will be collected at outfall D018 (Stantec S4.001).

Monitoring for pollutants of concern will be conducted once each year. Sampling will occur during a storm event producing at least 0.1 inch of precipitation, and which occurred at least 72 hours after the last storm event. A single grab sample will be taken at each outfall during the first 30 minutes of the discharge. If sampling is not possible during the first 30 minutes, then the sample will be taken during the first hour of the discharge and the reason why sampling during the first half hour was infeasible will be documented. Data recorded will include: the date and duration (hours) of the storm event(s) sampled; rainfall measurements or estimates (inches) of the storm event; the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and an estimate (liters) of the discharge samples.

Sampling will be collected by the Airport Engineer or their designated representative and processed at Endyne, Inc., in Williston, Vermont using approved EPA methods. The samples results will be sent to the Agency no more than 60 days after sampling took place. A copy of the completed DMR sent to the Agency will also be kept with this SWPPP in Appendix E.

This monitoring requirement will be waived after one year if the pollutant of concern is not detected in the stormwater discharge in an amount expected to cause and contribute to a violation

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of Vermont Water Quality Standards (VWQS), and the SWPPP is documented to reflect that there is no exposure of the pollutant of concern to stormwater at the site.

Corrective Actions must be taken whenever:

- Routine facility inspections, comprehensive site compliance evaluations, or any other process, observation, or event results in discovery of any deficiency; or
- There is an exceedance of a VWQS, or
- Following a benchmark exceedance, based on the average of 4 benchmark monitoring events conducted during the deicing season (Oct 15 – Apr 15), the SWPPP does not meet the requirements of Part 2 of the MSGP

8.0 Compliance Evaluation

A comprehensive site evaluation will be performed every year. This inspection will include all exposed industrial areas identified in Section 3, Table 4, and all BMPs identified in Section 5.5, of this plan for evidence of stormwater pollution.

The results of the inspection will be documented in a report containing at minimum: the date, the person(s) making the inspection, the scope of the inspection, observations relating to the discharge of pollutants from the facility, BMPs needing maintenance, BMPs which failed to operate as designed, locations where additional BMPs are needed, corrective actions taken, and any updates to the SWPPP. Copies of past inspection reports will be kept in Appendix F.

9.0 Endangered Species

Based on a review of the ANR Environmental Interest Locator, there are no federally listed species or designated critical habitats within the immediate vicinity of BTV. Therefore, BTV does not pose an adverse risk to endangered or threatened species, or critical habitat designated under the Endangered Species Act. This site is eligible for coverage under the MSGP by meeting Criteria A, as described in Appendix E of the general permit.

10.0 General Requirements

10.1 Record Keeping and Reporting

A copy of this SWPPP will be sent to the VT ANR, Stormwater Section and the original will be maintained onsite. The following documents will be attached to the SWPPP and available on site:

- A copy of the NOI submitted to the Secretary along with any subsequent correspondence;
- A copy of the authorization to discharge received from the Secretary;
- A copy of the permit (or an electronic copy easily accessible and available to SWPPP personnel);
- A description of any deviations from monitoring and inspection schedules and the reason for the deviation (e.g., adverse weather, impractical to collect samples within the first 30 minutes of a measurable storm event);
- A description of any corrective action taken at the site, including information on the triggering event and dates when problems were discovered and modifications occurred;
- Documentation of any benchmark exceedances and how they were responded to, including either (1) corrective action taken, or (2) a finding that no further pollutant reductions were technologically available and economically practicable and achievable in light of best industry practices consistent with Part 6.2.1.2 of the permit.

11.0 Summary of Updates

| Date Program or Map Amended | Summary of Updates |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| April 1, 2012 | <p>BTV's SWPPP, including site map and listing of BMPs, were updated for the following reasons:</p> <ul style="list-style-type: none"> • To reflect re-authorization of General Permit 3-9003 (MSGP) dated August 4, 2012. • To reflect the construction of several new BMPs covered under newly acquired operational Stormwater Discharge Permits since the previous SWPPP was developed in 2008. <p>No other changes to the SWMP other than updating the SWPPP dated April 1, 2012 were required for 2011.</p> |
| | |
| | |
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Appendix A: Non-Stormwater Discharges

Record the results of the Non-Stormwater Discharge Assessment and Certification in Worksheet 1. If evaluation of any discharge points is impossible, then the discharge points of concern and the reasons they could not be evaluated should be recorded on Worksheet 2.

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Worksheet 1: Assessment and Certification of Non-Stormwater Discharges

| Date of Test | Outfall | Method Used to Evaluate Discharge | Test Results | Potential Sources | Person or Party Conducting the Test |
|--------------|---------|-----------------------------------|--------------|-------------------|-------------------------------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

CERTIFICATION

I _____ (responsible corporate official) 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 gather and evaluate 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 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 & Official Title | Area Code and Telephone No. |
| Signature | Date Signed |

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Worksheet 2: Non-Stormwater Discharge Failure to Certify Notification

| Outfall Not Tested/Evaluated | Why Certification is Infeasible | Potential Sources of Non-Stormwater Pollution |
|-------------------------------------|----------------------------------------|------------------------------------------------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

CERTIFICATION

I _____ (responsible corporate official) 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 gather and evaluate 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 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 & Official Title | Area Code and Telephone No. |
| Signature | Date Signed |

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Appendix B: Routine Facility Inspections

Keep records of all routine facility inspections here. A sample inspection form has been included (see next two pages).

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| | | | |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|  | Stantec 55 Green Mountain Drive South Burlington, VT |  | City of Burlington, VT Burlington International Airport Multi-sector General Permit |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|

Inspection Item/Stantec Structure Numbre

Routine Facility Inspection Report

Signature _____ Date: _____ Time: _____
 Print: _____ Weather: _____
 Temperature: _____

BMP Inspection Point **BMP__** (As identified in the SWPPP and shown on the MSGP site map)

BMP Location _____ Location of BMP _____

Control Measures:

Condition of Existing: _____
 Effective? Yes: _____ No: _____
 Need to replace: Yes: _____ No: _____
 Any to be added? _____

Overall Assessment: _____

Incidents of noncompliance observed: _____

Other noncompliance issue identified: _____

Recommended solution(s): _____

Timetable for implementation: _____

Person/persons notified:
 Airport official: _____
 State of Vermont: _____
 Stantec manager: _____

HISTORY:

Any previous problems identified?
 No: _____
 Yes: _____

Previous recommendations, if any:
 No: _____
 Yes: _____

Status of recommendation: _____

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|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|  | Stantec 55 Green Mountain Drive South Burlington, VT |  | City of Burlington, VT Burlington International Airport Multi-sector General Permit |
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ACTIVITY TO BE MONITORED

Routine Facility Inspection Report

Signature _____ Date: _____ Time: _____
 Print: _____ Weather: _____
 Temperature: _____

PPS Inspection Point PPS__ (As identified in the SWPPP and shown on the MSGP site map)
 PPS Location Location of PPS

Control Measures:
 Condition of Existing: _____
 Effective? Yes: _____ No: _____
 Need to replace: Yes: _____ No: _____
 Any to be added? _____

Overall Assessment: _____

Incidents of noncompliance observed: _____

Other noncompliance issue identified: _____

Recommended solution(s): _____

Timetable for implementation: _____

Person/persons notified:
 Airport official: _____
 State of Vermont: _____
 Stantec manager: _____

HISTORY:
 Any previous problems identified?
 No: _____
 Yes: _____

Previous recommendations, if any:
 No: _____
 Yes: _____

Status of recommendation: _____

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Appendix C: Employee Training Records

Keep a sign in sheet for each employee training session your facility holds and retain them with this SWPPP.

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Appendix D: Quarterly Visual Monitoring Inspection Forms

Keep the completed inspection forms with the SWPPP here.

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| | | | |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|  | Stantec 55 Green Mountain Drive South Burlington, VT |  | City of Burlington, VT Burlington International Airport Multi-sector General Permit |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|

Quarterly Visual Inspection Form

Inspector: _____
Date: _____
Weather _____
Tempera. _____

Discharge Point _____ (As identified in the SWPPP and shown on the MSGP site map)
Location of point _____
Sampled from: _____ Free flowing stream
_____ Partially submerged If so, depth of water: _____
Condition of outlet _____
Other remarks _____

In a clean, clear container, analyze a sample of discharge water for:

Characteristic _____
Color of water: _____
Any odor present: _____
Clarity of sample: _____
Floating Solids: _____
Suspended Solids: _____
Settled Solids: _____
Foam present: _____
Oil Sheen present: _____
Other indicators: _____

Sampling period: Dec 1, 2011 - Jan 15, 2012
Testing Lab used: Endyne, Inc.; 160 James Brown Drive; Williston, VT (802) 879-4333
Reviewed by: _____

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Appendix E: Analytical Monitoring Reports

Results of your site's benchmark, effluent limitation, and impaired waters monitoring should be kept in this section of the SWPPP.

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| | | |
|-----------------------------------------------------------------------------------|------------------------------------------|-----------------|
|  | Vermont Multi-Sector General Permit | Permit Number: |
| | Discharge Monitoring Report (DMR) | SIC Code(s): |
| | | Outfall Number: |
| | | Sample Date: |
| Facility Name: | | |

| Benchmark Monitoring | Monitoring Year: | |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| | Quarter: <input type="checkbox"/> Jan – Mar <input type="checkbox"/> Apr – Jun <input type="checkbox"/> Jul – Sept <input type="checkbox"/> Oct - Dec | |
| Parameter | Cut-off Concentration (mg/L) | Sample Result (mg/L) |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| Effluent Limitation Monitoring <i>(additional space is available on the back)</i> | | | |
|------------------------------------------------------------------------------------------|---------------------------------|-------------------|----------------------|
| Parameter | Sample Type <i>(circle one)</i> | Limitation (mg/L) | Sample Result (mg/L) |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |

| Impaired Waters Monitoring | | |
|-----------------------------------|---------------------------------------|--------------|
| Parameter | Cut-off Concentration (if applicable) | Sample Value |
| | | |
| | | |
| | | |
| | | |

| | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------|--|
| Certification | | | |
| <p>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 gather and evaluate 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 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.</p> | | | |
| Name: | | Phone Number: | |
| Signature: | | Date: | |

| Effluent Limitation Monitoring (continued) | | | |
|--------------------------------------------|-----------------------------------|-------------------|----------------------|
| Parameter | Sample Type (<i>circle one</i>) | Limitation (mg/L) | Sample Result (mg/L) |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |
| | 1x year / Daily Max | | |
| | 30 day avg / Monthly avg | | |

Notes:

Instructions

- A separate DMR form must be submitted for each outfall sampled at your facility.
- List monitoring results for the type(s) of sampling you are reporting in the appropriate section. If your sampling event was used to satisfy more than one type of monitoring (e.g. Effluent Limitation and Benchmark monitoring) you may submit results for each type using the same form.
- For benchmark monitoring, be sure to indicate which quarter the sample was taken in.
- For effluent limitations, the permit may specify that a single grab sample is adequate, or that a daily maximum and a 30 day or monthly average is necessary. Circle the kind of value that you are reporting under the "Sample Type" heading.
- Write additional information about the sample collection and processing in the notes section, such as if the samples were taken more than 30 minutes after the start of discharge and the reason for the delay.
- Keep a copy of your DMR onsite with the SWPPP.
- DMR's must be sent to the Vermont Water Quality Division within 60 days of the sampling event at the following address:

Attn: MSGP Coordinator
 Water Quality Division
 103 South Main Street
 Building 10 North
 Waterbury, Vermont 05671-0408

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Storm Event Data

Information on the storm events sampled should be recorded here. This information does not need to be submitted to the Agency, but should be available upon request.

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**Burlington International Airport
Stormwater Pollution Prevention Plan (SWPPP)
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Calendar Year 2012

| | | | |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|  | Stantec 55 Green Mountain Drive South Burlington, VT |  | City of Burlington, VT Burlington International Airport Multi-sector General Permit |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|

Storm Event Data

Record information concerning the storm events that occurred during stormwater sampling. The information need not be submitted to the Agency, they may request the data.

| | | |
|----------------------------------------|-------------------|----------------------------|
| Monitoring Period: | _____ to _____ | |
| | MMM/DD/YYYY | MMM/DD/YYYY |
| Date of storm event: | _____ | Type of monitoring: _____ |
| | MMM/DD/YYYY | Effluent Limit/Benchmark |
| Storm duration: | _____ | Total precipitation: _____ |
| | Hours | Inches |
| Time since last measurable storm event | _____ | |
| | Days and/or hours | |

| | | |
|----------------------------------------|-------------------|----------------------------|
| Monitoring Period: | _____ to _____ | |
| | MMM/DD/YYYY | MMM/DD/YYYY |
| Date of storm event: | _____ | Type of monitoring: _____ |
| | MMM/DD/YYYY | Effluent Limit/Benchmark |
| Storm duration: | _____ | Total precipitation: _____ |
| | Hours | Inches |
| Time since last measurable storm event | _____ | |
| | Days and/or hours | |

| | | |
|----------------------------------------|-------------------|----------------------------|
| Monitoring Period: | _____ to _____ | |
| | MMM/DD/YYYY | MMM/DD/YYYY |
| Date of storm event: | _____ | Type of monitoring: _____ |
| | MMM/DD/YYYY | Effluent Limit/Benchmark |
| Storm duration: | _____ | Total precipitation: _____ |
| | Hours | Inches |
| Time since last measurable storm event | _____ | |
| | Days and/or hours | |

| | | |
|----------------------------------------|-------------------|----------------------------|
| Monitoring Period: | _____ to _____ | |
| | MMM/DD/YYYY | MMM/DD/YYYY |
| Date of storm event: | _____ | Type of monitoring: _____ |
| | MMM/DD/YYYY | Effluent Limit/Benchmark |
| Storm duration: | _____ | Total precipitation: _____ |
| | Hours | Inches |
| Time since last measurable storm event | _____ | |
| | Days and/or hours | |

Note: Add additional data sheets as necessary.

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Appendix F: Comprehensive Site Compliance Evaluation

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Stantec
55 Green Mountain Drive
So. Burlington, VT

City of Burlington, VT
Burlington International Airport
Multi-sector General Permit



Annual Compliance Evaluation Report for the Burlington International Airport

Name of person(s) completing evaluation: _____

Date of evaluation: _____

Weather conditions during inspection: _____

Inspect the following BMPs for evidence of contamination of runoff and complete the individual report form for each. Include the date of the inspection, use the Remarks column to record any issues uncovered and provide details of the findings in the table attached to this report. Check Done when finished inspecting each BMP.

| BMP | Date | Remarks | Done |
|-----|------|---------|------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |

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Inspect the following PPSs for evidence of contamination of runoff and complete the individual report form for each. Include the date of the inspection, use the Remarks column to record any issues uncovered and provide details of the findings in the table attached to this report. Check Done when finished inspecting each PPS.

| PPS | Date | Remarks | Done |
|-----|------|---------|------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |

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Inspect the following stormwater collection systems for evidence of contamination of runoff and complete the individual report form for each. The table has been arranged by permit number and S/N. Include the date of the inspection, use the Remarks column to record any issues uncovered and provide details of the findings in the table attached to this report. Check Done when finished inspecting each system. Discharge point for each included on individual BTV Stormwater Permits structures inspection forms.

| PERMIT 3028-9010.A BTV Master Permit | | | |
|--------------------------------------|------|---------|------|
| S/N | Date | Remarks | Done |
| 001 | | | |
| 002 | | | |
| 003 | | | |
| 004 | | | |
| 005 | | | |
| 006 | | | |
| 007 | | | |
| 008 | | | |
| 009 | | | |

| PERMIT 1-1391 South Apron Expansion | | | |
|-------------------------------------|------|---------|------|
| S/N | Date | Remarks | Done |
| 001 | | | |

| PERMIT 1-0839 North Outfall and Taxiway A Improvements | | | |
|--------------------------------------------------------|------|-------------------------------------------------------|------|
| S/N | Date | Remarks | Done |
| 001 | | No longer covered under this permit – see 3028-INDS.A | |
| 002 | | | |
| 003 | | No longer covered under this permit – see 3028-INDS.A | |

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| PERMIT 3028-INDS.A Reconstruct TW B & C; Relocate TW J; Construct TW G | | | |
|------------------------------------------------------------------------|------|---------|------|
| S/N | Date | Remarks | Done |
| 001 | | | |
| 002 | | | |

| PERMIT 3028-INDS.1 Reconstruct, Mark, and Groove Runway 15-33 | | | |
|---------------------------------------------------------------|------|---------|------|
| S/N | Date | Remarks | Done |
| 001 | | | |
| 002 | | | |
| 003 | | | |
| 004 | | | |
| 005 | | | |
| 006 | | | |
| 007 | | | |

| PERMIT 3845-INDS.A Heritage Flight Aviation Campus Expansion | | | |
|--------------------------------------------------------------|------|---------|------|
| S/N | Date | Remarks | Done |
| 001 | | | |
| 002 | | | |

| PERMIT 6-0084 South End Development, Phase II | | | |
|-----------------------------------------------|------|---------|------|
| | Date | Remarks | Done |
| 001 | | | |

| PERMIT 6-0075 Aircraft De-icing Fluid Treatment Facility | | | |
|----------------------------------------------------------|------|---------|------|
| | Date | Remarks | Done |
| 001 | | | |

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Stantec
55 Green Mountain Drive
So. Burlington, VT

City of Burlington, VT
Burlington International Airport
Multi-sector General Permit



| PERMIT MS4 Miscellaneous Areas Not Covered in Other Permits | | | |
|-------------------------------------------------------------|------|---------|------|
| | Date | Remarks | Done |
| 001 | | | |
| 002 | | | |
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EVIDENCE OF STORMWATER POLLUTION

Use this form in conjunction with the Annual Compliance Inspection form to document the existence of failures in the stormwater systems. Use the form for any of the inspection categories, BMPs, PPSs, or collection systems.

| Item Designation: (BMP_, PPS, etc.) | | | Location | | |
|----------------------------------------------------------------------------------------|-----|----|------------------|--------------------|----------|
| Is there evidence of the following problems? | YES | NO | Describe Problem | Corrective actions | Schedule |
| Industrial materials, residue, or trash in contact with stormwater | | | | | |
| Leaks or spills from industrial equipment, drums, tanks, or other containers | | | | | |
| Offsite tracking of industrial or waste material, sediment tracked into site | | | | | |
| Waste materials moving from unexposed areas to exposed areas by wind or other movement | | | | | |
| Evidence or potential for pollutants entering the drainage system | | | | | |
| Evidence of pollutants discharging to the receiving waters at discharge points | | | | | |
| Scouring around discharge points or other degrading of structures; excessive silt | | | | | |

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Are there any new sources of potential stormwater pollutants not previously identified in the SWPPP?
YES / NO

If YES, how will the SWPPP be modified to prevent contamination of runoff?

Have either visual inspections or monitoring during the past year indicated pollution of stormwater which has not been addressed? YES / NO

If YES, describe the potential sources of any pollutants found in runoff:

What actions or modifications to the SWPPP are needed to prevent these pollutants from reaching the receiving waters?

Describe any other places where the site inspection indicated noncompliance with the SWPPP and other conditions of the general permit:

What other changes to the SWPPP are needed to ensure that the site is in compliance?

Certification of Compliance

This Compliance Evaluation Report has been prepared by qualified personnel who properly gathered and evaluated information submitted for this Report. The information in this Report, to the best of my knowledge, is accurate and complete. After inspection of all exposed industrial areas BMPs, and stormwater systems, and review of the SWPPP and required monitoring, I find that this facility is in compliance with the SWPPP and the permit.

Name (print): _____

Title: _____

Signature: _____

Date: _____