JUNEAU INTERNATIONAL AIRPORT (JNU)

STORMWATER POLLUTION PREVENTION PLAN

SEPTEMBER 29, 2015

PREPARED FOR COMPLIANCE WITH
2015 MSGP
AKR060000

Table of Contents
Stormwater Pollution Prevention Plan

CHAPTER 1 AIRPORT MANAGER OVERVIEW 1-1

1-A DOCUMENT LAYOUT 1-1
1-B OVERVIEW 1-1

CHAPTER 2 PLANNING & ORGANIZATION 2-1

2-A OVERVIEW 2-1
2-B SITE SPECIFIC DATA 2-1
2-C STORMWATER POLLUTION PREVENTION TEAM 2-2
2-D RECORDS 2-3

CHAPTER 3 SITE ASSESSMENT 3-1

3-A OVERVIEW 3-1
3-B ASSESSMENT AREAS 3-3
3-B.1 Main Ramp 3-3
3-B.2 Auto Parking 3-3
3-B.3 Runway and Taxiway 3-4
3-B.4 West Ramp 3-4
3-B.5 Bulk Fuel Storage 3-5
3-B.6 FAA Automated Flight Service Station 3-5
3-B.7 East Ramp 3-5
3-B.8 National Guard Ramp 3-5
3-B.9 E-1 Ramp 3-6
3-B.10 TEMSCO Helicopters Ramp 3-6
3-B.11 Float Pond 3-6
3-B.12 Drainage Areas along Road System outside Fence 3-6
3-C DESCRIPTION OF POTENTIAL POLLUTANT SOURCES 3-6
3-C.1 Inventory of Exposed Materials 3-7
3-C.2 Spills and Leaks 3-9
3-D NON-STORMWATER DISCHARGES 3-10
3-E NON-STORMWATER DISCHARGE INSPECTIONS 3-10

CHAPTER 4 BEST MANAGEMENT PRACTICES (BMPS) 4-1

4-A OVERVIEW 4-1
4-A.1 Baseline BMPs 4-1
Good Housekeeping 4-2
Visual Inspections 4-3
Spill Prevention 4-3
Spill Response 4-4
Fueling 4-4
Vehicle Maintenance 4-5
Chemical and Hazardous Materials Loading and Unloading 4-5
Painting 4-6
Storage 4-6
Employee Training 4-6
Education 4-6
4-B ADVANCED BMPS 4-7
Storm Drain Maintenance 4-7

CHAPTER 5 INSPECTIONS, VISUAL ASSESSMENTS, STORMWATER MONITORING, & TRAINING 5-1

5-A Overview 5-1
5-B Routine Facility Inspections 5-1
5-C Quarterly Visual Assessments 5-2
5-D Benchmark Monitoring 5-3
5-E Annual Comprehensive Site Inspection 5-4
5-F Training 5-5

CHAPTER 6 SWPPP CALENDAR & BLANK FORMS 6-1

6-A SWPPP Calendar 6-2

TABLES

Table 2-1 - Facility Data Sheet 2-1
Table 2-2 - JNU Pollution Prevention Team 2-1
Table 3-1 - Tenants at Juneau International Airport 3-1
Table 3-2 - Inventory of Materials 3-2
Table 3-3 - Spill History Summary 3-9
Table 5-1 - Benchmark Monitoring Parameters 5-3

Attachments

SWPPP Certification(s) ..... Attachment A
Site Maps ..... Attachment B
2015 MSGP ..... Attachment C
Inspection & Monitoring Forms ..... Attachment D
Employee Training Log ..... Attachment E
Benchmark Monitoring Sampling Data ..... Attachment F
NOI Forms and ADEC Acknowledgement(s) ..... Attachment G

Figures

figure B-1, SWPPP Map ..... Appendix B
Figure B-2, Drainage Basins ..... Appendix B

Chapter 1 Overview

1-A Document Layout

This document is designed to ensure that Juneau International Airport (JNU) is complying with the Alaska Department of Environmental Conservation (ADEC) 2015 Multi-Sector General Permit (2015 MSGP) and consists of the following chapters:

- Chapter 1 "Overview" provides an overview of the National Pollution Discharge Elimination System (NPDES) for stormwater discharges from industrial activities.
- Chapter 2 "Planning & Organization" describes planning and organization required by the 2015 MSGP. Names, titles, roles, and responsibilities of the stormwater pollution prevention team are included. This Chapter generally covers the Facility Description and Contact Information section of the 2015 SWPP Template.
- Chapter 3 "Site Assessment" provides a comprehensive assessment of stormwater discharges at JNU by area, including a description of industrial activities and their associated pollution potential. This Chapter generally covers the Potential Pollutant Sources section of the 2015 SWPPP Template.
- Chapter 4 "Best Management Practices (BMPs)" is a description of BMPs that can be applied for stormwater pollution prevention at JNU. The BMPs that will be implemented are based on the type of industrial activity that occurs in an area. Basic spill prevention and response procedures are described in the BMPs. This section generally covers the Storm Water Control Measures section of the 2015 SWPPP Template.
- Chapter 5 "Inspections, Visual Assessments, Stormwater Monitoring, & Training" provides information on inspections, monitoring, recordkeeping and training requirements. This section generally covers the Schedules and Procedures for Monitoring as well as the Inspections sections of the 2015 SWPPP Template.
- Chapter 6 "SWPPP Calendar" provides a calendar which indicates timing of inspections and reporting and generally covers the SWPPP Certification and Modification sections of the 2015 SWPPP Template.
- Attachments include the following
  - Attachment A: SWPPP Certifications
  - Attachment B: Site Maps
  - Attachment C: 2015 MSGP
  - Attachment D: Inspection & Monitoring Forms
  - Attachment E: Employee Training Log
  - Attachment F: Benchmark Monitoring Sampling Data Summary
  - Attachment G: NOI Forms and ADEC Acknowledgement(s)

1-B Overview

EPA regulations under the Federal Water Pollution Control Act, commonly called the Clean Water Act (33 U.S.C. §1251, et seq.), control the point source discharge of storm water from industrial facilities. The program is regulated through the National Pollutant Discharge Elimination System (NPDES) (Section 402 of the Clean Water Act). Under the NPDES program, any person responsible for the discharge of a pollutant or pollutants into any waters of the United States from any point source must apply for and obtain coverage under a permit. EPA regulations issued in 1990 created the NPDES permitting system for storm water discharges associated with industrial activities.

Currently, the storm water program relies upon three types of permits:

- The Multi-Sector General Permit (MSGP),
- The General Permit for Construction Activities, and,
- The Individual Permit.

EPA administered the MSGP program until October 30, 2009 at which point ADEC assumed primacy for administering and enforcing the permit. On April 1, 2015, a new Multi-Sector General Permit became effective for Stormwater Discharges associated with Industrial Activities for Alaska (2015 MSGP). The 2015 MSGP includes requirements affecting 30 different industrial sectors, including airports. The sector code for JNU is "Sector S-Air Transportation". Sector S covers air transportation facilities with SIC codes 4512-4581 and activities such as vehicle maintenance shops, material handling facilities, equipment cleaning operations, aircraft deicing/anti-icing operations as well as pavement deicing/anti-icing operations.

The 2015 MSGP specifies steps that facility operators must take prior to becoming eligible for permit coverage, including developing and submitting a SWPPP, submitting a Notice of Intent (NOI), and installing stormwater control measures to minimize pollutants in stormwater runoff. The 2015 MSGP also includes effluent limits, monitoring, inspection, reporting requirements, and corrective action requirements. The deadline for airport operators developing a comprehensive SWPPP to submit a NOI to ADEC under the 2015 MSGP is September 30, 2015.

A SWPPP has multiple purposes including:

- Establishment of a pollution prevention team;
- Identification of and location of potential sources of contaminants;
- Identification of non-stormwater discharges;
- Identification of stormwater drainage patterns;
- Establishment of BMPs tailored to prevent or minimize pollution potential from the specific industrial activities at the facility;
- Establishment of an inspection schedule, monitoring program, and a training program; and
- Submission of reports and maintenance of a recordkeeping system.

This SWPPP fulfills the requirements of the 2015 MSGP for industrial activities at JNU. It requires amendment if:

- The plan proves ineffective in eliminating or significantly minimizing pollutants from discharging with stormwater; or
- A significant change in design, construction, or operation or maintenance is implemented that has a significant potential for discharge of pollutants to waters of the United States.

Chapter 2 Planning & Organization

2-A Overview

The purpose of the requirements of the 2015 MSGP is to ensure that pollutants stay out of stormwater discharges from industrial activities, and airports are specifically addressed in the regulations. To achieve the goals of the regulations, JNU and its tenants must select and implement various BMPs. BMPs include schedules of activities, prohibitions of certain practices, maintenance procedures, and other management practices to prevent or reduce the stormwater pollution at the facility.

The five major phases of developing a pollution prevention plan are:

- Planning and organization including record keeping,
- Assessment,
- BMP identification and selection,
- BMP implementation and training, and
- Evaluation and site inspection.

JNU tenants are co-permittees of the 2015 MSGP and must implement applicable BMPs set out in this SWPPP. Tenants may be members of the pollution prevention team. Some tenants will be able to certify "no-exposure" and will not be required to implement the BMPs set out in this SWPPP.

2-B Site Specific Data

The following table provides summary information for JNU:

Table 2-1 - Facility Data Sheet

Site Name	Juneau International Airport (JNU)
Location	1873 Shell Simmons Dr. Juneau, Alaska 99801
Geographic Location	N 58^{o} 21' 17" W 134^{o} 34' 43"
Owner/Operator	City and Borough of Juneau
Telephone	907-789-7821
Point of Contact	Airport Manager
Standard Industrial Classification (SIC) Codes	4581 (air transportation)
Receiving Waters	Duck Creek, Gastineau Channel, Mendenhall River, Jordan Creek
NPDES Permit Number	MSGP: AKR060000 Individual Tracking Number To Be Assigned
NPDES Permitting Authority	ADEC

2-C Stormwater Pollution Prevention Team

ADEC requires each facility to identify specific individuals as members of a Storm Water Pollution Prevention Team. The team is responsible for developing, implementing, maintaining, and revising the SWPPP. The team is comprised of people who are familiar with the facility and its operations and a person in a senior management position who has overall responsibility for the document. JNU tenants that handle large quantities of fuel and deicing material are encouraged to be members.
The responsibilities of the team include the following:

- Implementing SWPPP requirements,
- Defining and agreeing upon an appropriate set of goals for the facility's storm water management program,
- Being aware of any changes that are made in facility operations or configuration to determine whether any changes must be made to the SWPPP, and
- Maintaining a clear line of communication with management to ensure a cooperative partnership to solve stormwater management issues at the facility.

Table 2-2 lists personnel and/or positions designated as members of JNU's Pollution Prevention Team. Annual Pollution Prevention Team meetings shall be held to discuss the results of annual comprehensive site compliance inspection and plan any corrective actions (see Chapter 5, paragraph 5-E).

TABLE 2-2 - JNU Pollution Prevention Team

Name	Title	Telephone	Team Responsibilities
Patricia deLaBruere	Airport Manager	789-7821	Signature authority, chair of annual Pollution Prevention Team meetings
Ken Nichols	Airport Engineer	586-0453	In charge of SWPPP development and management, visual assessments, overall facility inspections, maintaining SWPPP records.
Scott Rinkenberger	Airport Operations and Maintenance Superintendent	789-4001	In charge of BMPs for airfield operations.
Robert Dilg, Jr.	Terminal Building Maintenance Supervisor	789-5104	In charge of BMPs for terminal building fuel deliveries.
Tenant Representatives			Tenants may join the SWPPP Team upon request. No tenants are currently listed on the SWPPP Team.

2-D Records

This SWPPP and all SWPPP records must be retained for a period of at least three years after the date that the 2015 MSGP expires or is terminated. The inspection and monitoring information will be kept in the same file system to verify permit compliance to regulators. Both JNU and tenants have recordkeeping requirements.

The following records are required:

- Routine facility inspection logs,
- Visual assessment logs,
- Benchmark monitoring logs,
- Training records, and
- Spill reports for all hazardous substance spills equal to or greater than the reportable quantity.

Routine facility inspections, visual assessments, benchmark monitoring, and training required by 2015 MSGP are described in Chapter 5. Chapter 5 also delineates responsibilities and identifies the location of records that must be kept in conjunction with this SWPPP. Blank forms that will be used by JNU for documenting facility inspections, visual assessments, benchmark monitoring, and training are found in the attachments along with an example of ADEC's standardized MSGP Industrial Discharge Monitoring Report (MDMR).

ADEC regulation 18 AAC 75.300 sets out the reporting requirement for hazardous substance spills. JNU maintains an SPCC plan and an emergency plan which outline spill response procedures.

Chapter 3 Site Assessment

3-A Overview

JNU is located in the City and Borough of Juneau about 10 miles northwest of downtown Juneau. The facility is approximately 650 contiguous acres, including portions of the Mendenhall River and Gastineau Channel intertidal wetlands. The airport has over 600 landings per day during peak seasons and serves as a regional hub for southeast Alaska and Canada. JNU leases out property to a number of aviation-related businesses that operate at the airport. JNU also leases out hangar space and airplane tie-down spaces to private individuals. Table 3-1 provides an alphabetical listing of the companies that conduct business as tenants at the airport.

Table 3-1 - Tenants at Juneau International Airport

Tenant	Location
Aero Services	West Ramp, Fuel Farm
Airlift Northwest	National Guard Ramp
Alaska Airlines	Main Ramp
Alaska Central Express	West Ramp
Alaska Fly N Fish	Float Pond
Alaska Seaplane Service	Main Ramp, East Ramp
Civil Air Patrol	West Ramp
Coastal Fuel	East Ramp
Coastal Helicopters	East Ramp
Empire Airlines	Main Ramp
Federal Express	Main Ramp
Fjord Flying	Main Ramp
Glacier Valley Fire Station	Fire Station
Harris Air	Main Ramp
JNU (maintenance shop)	Main Ramp
JNU (urea and sand storage hangar)	East Ramp
National Guard	National Guard Ramp
Northstar Trekking	West Ramp
Private hanger owners	West Ramp, East Ramp
TEMSCO Helicopters	Temsco Ramp
Tiedown Tenants	West Ramp, East Ramp
Ward Air	East Ramp
Wingnut Aviation	West Ramp
Wings of Alaska	Main Ramp, National Guard Ramp
UPS	West Ramp
USF&WS	West Ramp

Industrial activities on airport property include runway, ramp, and apron maintenance, aircraft maintenance and fueling, aircraft and vehicle washing, building maintenance, vehicle maintenance and fueling, cargo shipping and receiving, and fuel storage and delivery. Products such as deicing and anti-icing materials, fuel, lubricants, solvents, and paints are stored, transferred, used, and disposed of during

the course of conducting the industrial activities. It should be noted that aircraft and vehicle washing are not covered by this SWPPP.

For the purposes of this SWPPP, locations of industrial activities have been grouped into the following major assessment areas:

1. Main Ramp
2. Auto Parking
3. Runway and Taxiway
4. West Ramp
5. Bulk Fuel Storage
6. FAA Automated Flight Service Station (AFSS)
7. East Ramp
8. National Guard Ramp
9. D-2 Ramp
10. TEMSCO Ramp
11. Float Pond
12. Drainage Areas along Road System Outside Fence

Sections 3-B and 3-C discuss each area in more detail, including:

- Drainage areas, catchment drains, outfalls, and stormwater discharge locations
- Structural stormwater management measures
- Locations and inventory of exposed significant materials
- Locations of past spills and leaks
- Locations of activities that may introduce potential pollutants to stormwater
- Underground storage tanks
- Above ground storage tanks

Figure B-1 illustrates the required map features and assessment areas including: stormwater drainage patterns, stormwater outfalls, and established inspection areas. Figure B-2 illustrates the drainage basins draining to each receiving water. Drainage basins are shown for each of the discharges. (i.e. Duck Creek, Gastineau Channel, Mendenhall River, and Jordan Creek) These figures are in Attachment B to this document.

3-B Assessment areas

The following subsections include site assessments for each of the areas listed in 3-A. The location of each area is described, the businesses and types of industrial activities that take place in the area are listed, the potential pollutants are listed, and the runoff pattern and control structures are described. The runoff from some of the areas is combined with other areas as the water is routed to an outfall. Outfalls draining only the runways or taxiways might have only fuels, urea, glycol, and sediment as potential contaminants. Outfalls that drain the areas near the majority of the airport buildings could have the other potential pollutants.

3-B.1 Main Ramp

This area includes the airport terminal, the main ramp south and west of the terminal, and the other businesses on the north and west sides of the main ramp. Businesses and operations in the main terminal include, Alaska Airlines, Air Excursions, Wings of Alaska, Alaska Seaplane Service, and TAL Air. Businesses and operations on the north end of the main ramp include Federal Express and JNU's maintenance shop. Businesses and operations on the west side of the ramp include Alaska Airlines Freight, and the LAB Flying hangar (now unoccupied). Industrial activities on the ramp include airplane arrival and departure, passenger and cargo services, aircraft maintenance and washing, structural repair, welding, engine repair and rebuilding, and electrical system repair, engine flushing, hydraulic fluid replacement, aircraft fueling and maintenance, snow removal/storage, and deicing and anti-icing of aircraft.

Potential pollutant sources that could reach stormwater from activities at these locations include deicing and anti-icing chemicals, sediment from sanding, fuel, oil, heavy metals, small quantities of spray paints, thinners, strippers, other engine fluids, used fuels, used oils, waste solvent, industrial soap, and organic debris.

Runoff from the main ramp is routed to several areas. Runoff from the west side of the main ramp is collected in catchment drains in front of Alaska Air Cargo and routed south to the western most of five vegetated swales between the ramp and the taxiway. The swales have gentle side slopes and serve as detention and filtration areas for stormwater runoff. From there, the runoff flows west to a culvert discharging into the Float Pond.

Runoff from the north end of the main ramp, the south end of the terminal and east side of the main ramp is collected in catchment drains and routed south to a swale between the main ramp and the taxiway. From there, the runoff flows east through a series of vegetated swales under intersections C-1, D-1, and D-2, and then discharges into Jordan Creek at intersection E-1 (Outfall 6). From there, Jordan Creek is routed south under the taxiway and runway and discharges into Gastineau Channel (Outfall 11).

3-B.2 Auto Parking

Auto parking (including public, employee, and rental car lots) is located north and east of the airport terminal. The lots are paved with catchment basins installed to collect runoff. Industrial activities in the parking lots include snow removal, sanding, and deicing.

Potential pollutant sources that could reach stormwater from activities at these locations include sand and salts from snow removal, and antifreeze and petroleum hydrocarbons from automobile leaks and drips.

Runoff from the lots is routed to two areas. Runoff from the rental car lot, the west portion of the public parking lot, and Shell Simmons Drive in front of the terminal is collected in catchment drains and routed around the east end of the terminal, then south through a culvert under the main ramp. The runoff

discharges into a vegetated drainage swale between intersections C-1 and D-1. From there, the runoff is routed about 2,500 feet along the vegetated swale to Jordan Creek (Outfall 6), which then discharges into Gastineau Channel (Outfall 11).

Runoff from the east portion of the public parking lot and the intersection of Yandukin and Shell Simmons Drive is collected in catchment drains and routed through a culvert under Yandukin Drive. The water is then routed through a vegetated swale that discharges into a pond adjacent to Jordan Creek.

3-B.3 Runway and Taxiway

The paved airport runway and parallel taxiway are located south of the main terminal. The main industrial activities on the runway and taxiway consist of maintenance activities include snow removal, deicing and anti-icing activities, pavement maintenance and repair (including crack filling and paint striping.)

Potential pollutant sources that could reach stormwater outfalls from the airport runways and taxiways include urea from deicing and anti-icing, sediment from sanding operations, and hydrocarbons that may drip from vehicles or equipment as well as crack filling and striping operations.

The east-west oriented runway and taxiway are separated by four broad vegetated ditches with gentle side slopes. The vegetated swales serve as natural water treatment systems by providing settling, filtering, and biodegradation areas for stormwater runoff. The runway and taxiway are connected by five intersections some of which have culvert connections to allow runoff to flow between the ditches. The taxiway is separated from the ramps by five narrower vegetated ditches. Another vegetated drainage swale runs parallel to the runway on the south side between the float pond and the runway. Plows are used to remove snow from the paved aircraft operating areas.

Runoff from the runway itself is divided into east and west flow patterns at intersection C. Runoff going east flows into Jordan Creek, the float pond, and the vegetated wetlands of Gastineau Channel. Runoff going west flows into Duck Creek, and the float pond.

Runoff from the runway is further divided along the north-south longitudinal axis of the runway itself. Runoff on the north half of the runway is routed off the runway by sheet flow into the drainage ditches. Runoff from the south half of the runway is routed off in two ways. Runoff from the west end is routed to a trench drain system located 12 feet south of the runway lighting system. The water is collected in a drain under the runway and culverted to a vegetated ditch where it is collected in another series of culverts. These culverts pass underneath the float pond access road and discharge into the float pond (Outfall 13 is a typical example of these eleven substantially identical outfalls).

Runoff from the east end is routed into a series of catchment drains that are culverted off the runway. The culverts discharge onto the vegetated banks of the runway. Runoff from the furthest east swale is culverted under intersection G and discharges onto the tide flats at the east end of the runway (Outfall 10).

3-B.4 West Ramp

The west ramp is located west and south of Alex Holden Drive. The area includes Aero Services, Northstar Trekking, United Parcel Service, Civil Air Patrol, a number of hangar buildings, and numerous unpaved tie downs for small planes. Industrial activities include fuel storage and aircraft fuelings, cargo handling, aircraft storage and maintenance, engine building and repair.

Potential pollutant sources that could reach stormwater from activities at these locations include jet fuel, aviation gas, lubricants, solvents, small quantities of spray paints, thinners, strippers, other engine fluids,

engine parts cleaner, used fuels, used oils, waste solvent. Spills and leaks from heating oil tanks at the hangar buildings are also a potential source of stormwater pollution.

Runoff from the hangars and airplane tie down areas is routed into catchment drains, piped to the swale between the ramp and the taxiway, and discharged into the Float Pond.

3-B.5 Bulk Fuel Storage

The bulk fuel storage area, consisting of five large and one small above ground tanks that are used to store aviation fuel, is located north of the west ramp area. The tanks are double walled to prevent spills. A small pump house is used to fill mobile trucks that supply tanks and aircraft at the airport.

Potential pollutant sources that could reach stormwater from activities at these locations include jet fuel, aviation gas, and diesel fuel.

The site is sloped to the south to promote infiltration through a vegetated area. Runoff from access roads to the storage area is routed to Duck Creek.

3-B.6 FAA Automated Flight Service Station

This area is located north of the main ramp. It includes the FAA flight service station, Aero Services storage warehouse, Aero Services maintenance building, Alaska Communication Systems, and Budget Rent-a-Car.

Potential pollutants include lubricants, solvents, small quantities of spray paints, thinners, strippers, other engine fluids, engine path cleaner, detergents, used fuels, used oils, waste solvent.

Runoff from this area comes from the catchment drains and roadside ditches along Shell Simmons Drive, Cessna Drive, and Alex Holden Way. Stormwater runoff discharges through culverts under Alex Holden Way into vegetated swales leading a short distance into Duck Creek.

3-B.7 East Ramp

This area includes JNU's urea and sand storage hangar, Coastal Helicopter, Coastal Fuel, Ward Air, and five hangar complexes for storage and maintenance of commercial and private aircraft.

Potential pollutant sources that could reach stormwater from activities at these locations include urea, jet fuel, aviation gas, lubricants, solvents, small quantities of spray paints, thinners, strippers, other engine fluids, engine cleaner, used fuels, used oils, waste solvent. Spills and leaks from heating oil tanks at the hangar buildings are also a potential source of stormwater pollution.

The runoff from this area is routed to Jordan Creek by sheet flow directly to grassy areas and by catchment drains into culverts that discharge into the swales between the ramp and the taxiway. The runoff discharges into Jordan Creek near the E-1 intersection (Outfalls 7 and 8).

3-B.8 National Guard Ramp

This area is located east of the Main Ramp and east of the East Ramp. It includes the Glacier Valley Fire Station, Airlift Northwest, Alaska Army National Guard, and Wings of Alaska.

Potential pollutant sources that could reach stormwater from activities at these locations include jet fuel, aviation gas, lubricants, solvents, small quantities of spray paints, thinners, engine cleaner, used fuels, used oils, waste solvent. There are two USTs at Wings of Alaska and ASTs at the Alaska Army National Guard, Airlift Northwest, and Glacier Valley Fire Station.

Runoff from the north side of the area (outside the security fence along Livingston Way) is routed to catchment drains in the vegetated ditches on the north and south sides of Livingston Way. The runoff flows east to a culvert at the east end of Livingston Way and discharge into a drainage on the tide flats (Outfall 9). The drainage travels east under intersection F-1.

3-B.9 E-1 Ramp

This area is located south of the National Guard Ramp. It includes two hangars for storage and maintenance of private aircraft.

Potential pollutant sources that could reach stormwater include aviation fuel and lubricants. Runoff from the site is by infiltration into the ground.

3-B.10 TEMSCO Helicopters Ramp

This area is located east of the National Guard Ramp and consists of the TEMSCO Helicopter facility. The facility supports helicopter flight tours and helicopter maintenance.

Potential pollutant sources that could reach stormwater from activities at these locations include jet fuel, lubricants, solvents, small quantities of spray paints, thinners, engine cleaner, aviation and heating fuels, used oils, and waste solvent.

Runoff from the facility is routed by sheet flow to the vegetated tide flats surrounding the site. There are catchment drains on the approach ramp at intersection F-1 that route stormwater to the vegetated tide flats.

3-B.11 Float Pond

This area is located along the south side of the airport. The float pond runs in an east-west direction paralleling the main airport runway. The float pond area includes parking areas for vehicles and equipment and slips for tying up float planes. Fuel trucks deliver fuel to the planes at the tie downs.

The float pond collects runoff from the south side of the runway and serves as a large retention and settling pond. There is a tidally influenced culvert at the west end of the float pond that connects the pond with the Mendenhall River. The culvert has a one-way tidal flap that only allows water from the river into the pond. On rare occasions, when the level of the pond is high and there is a high tide, water flows over the outlet structure from the pond into the Mendenhall River (Outfall 16).

3-B.12 Drainage Areas along Road System outside Fence

These areas include the curb and gutter, catchment drains, vegetated ditches, and culverts that collect, treat, and discharge stormwater runoff from portions of Shell Simmons Drive, Cessna Drive, Alex Holden Way, Livingston Way, and Yandukin Drive.

Potential pollutant sources that could reach stormwater from activities at these locations include antifreeze and petroleum hydrocarbons from automobile leaks and drips.

3-C Description of Potential Pollutant Sources

Each area that generates stormwater discharges with a reasonable potential for containing significant amounts of pollutants, is assessed to determine the types of pollutants which are likely to be present in stormwater discharges and the direction of flow.

Dry weather deicing activities represent a potential pollutant source for stormwater. The impacts of dry weather deicing at the airport are considered minimal due to the low quantity and toxicity of the chemical used. Also, weather conditions where dry weather deicing is needed are infrequent.

Aircraft, vehicle, and GSE wash down is another activity where there is a potential for runoff to enter the stormwater system. Some BMPs such as minimizing the amount of wash down water, recycling wash down water, and using non-phosphate detergents are already in place. However, JNU is undertaking an evaluation of additional BMP's to control wash down water. These include the possibility of establishing wash down areas in grassy swales where the water can be held, naturally filtered, and allowed to soak into the ground. Another option is to construct a wash down area with a holding sump where wash down water can be held until it is pumped and transferred to the city sewer system. Both of these options will require additional feasibility studies. Once an option (or options) has been selected, it will be incorporated into the budget, if necessary, for upcoming airport capital improvement projects.

3-C.1 Inventory of Exposed Materials

Table 3-2 provides an inventory of the types and locations of materials handled at the site that potentially could be exposed to precipitation. The significant materials that have been handled, treated, stored, or disposed at JNU include diesel fuel/aviation fuel, gasoline, used and waste oil, glycols, urea, road salt, and sand.

Table 3-2 – Inventory of Materials

Material	Inspection Area*
Diesel fuel/Aviation fuel (aboveground storage tanks)	A: Northwest hangars C: Fuel farm D: Cessna Drive complex E: Maintenance shop/Fed Ex F: Main ramp H: East ramp complex I: East hangars J: Glacier Fire Station L: National Guard complex M: Temsco
Diesel fuel (underground storage tanks)	D: Cessna Drive complex E: Maintenance shop/Fed Ex G: Terminal L: National Guard complex M: Temsco
Gasoline (aboveground storage tanks)	E: Maintenance shop/Fed Ex M: Temsco
Used and waste oil	B: Alex Holden Way complex E: Maintenance shop/Fed Ex H: East ramp complex L: National Guard complex
Urea mixture (aboveground tanks)	E: Maintenance shop/Fed Ex
Urea pelletized (dry)	H: East ramp complex
Sand-bulk dry storage	H: East ramp complex
Road salt-dry storage	H: East ramp complex
Paint products	E: Maintenance shop/Fed Ex H: East ramp complex

*Inspection areas correspond to the inspection areas on Figure B-1.

3-C.2 Spills and Leaks

There have been no recent spills of significance at JNU that were exposed to precipitation or that otherwise drained to a stormwater conveyance. Table 3-3 summarizes three spills that have been entered into the ADEC database over the past three years.

Table 3-2 - Spill History Summary

Date of Spill	Estimated Spill Volume	Product Spilled	Location of Spill	Source of Spill	Cause of Spill	Corrective Action Taken

3-D Non-stormwater Discharges

Non-storm water discharges to waters of the United States that are not authorized by an NPDES permit are unlawful, and must be terminated. Examples of non-storm water discharges include any water used directly in a manufacturing process (process water), vehicle and ground support equipment wash water, dry weather deicing, or sanitary wastes. Connections of non-storm water discharges to a storm water collection system are often unidentified. If such connections are discovered, JNU will assess the potential for the discharge to enter stormwater and take steps to prevent any such discharge from occurring. This could include disconnecting the discharge or submitting an NPDES permit application to ADEC or EPA.

As noted above, unless covered by an NPDES permit, most non-storm water discharges are not allowed by the MSGP. However, the MSGP does authorize the following types of non-storm water discharges:

- Discharges from fire-fighting activities
- Fire hydrant flushings
- Potable water sources including waterline flushings
- Irrigation drainage
- Lawn watering
- Uncontaminated ground water
- Foundation or footing drains where flows are not contaminated with process materials
- Discharges from springs
- Routine exterior building washdown which does not use detergents or other compounds
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred and where detergents are not used.

3-E Non-stormwater Discharge Inspections

JNU and tenants may use three dry weather methods to check for non-stormwater discharges. These include (1) visual inspection; (2) plant schematic review; and (3) dye testing.

The easiest method for detecting non-stormwater connections into the storm water collection system is to observe all discharge points during dry weather. As a rule, the discharge point should be dry during periods of extended dry weather. However, drainage from a particular rain event can continue for several days or more after the rain has stopped. Also, tidally influenced ground water can appear in the drainage system at JNU.

A review of CBJ's sewer maps or facility schematics was used to determine if there are any interconnections into the storm water collections system.

Dye testing has also been used to test if a facility or fixture in question is connected to a storm water collection system. The use of dye testing is coordinated with the CBJ Public Works Department and Alaska Department of Fish & Game.

JNU began inspecting for hangars for non-storm water discharges April 2, 2015 and will conclude the final inspections by October 15, 2015. No non-storm water discharges have been discovered from these inspections.

Chapter 4 Best Management Practices (BMPs)

4-A Overview

BMPs are measures or controls that JNU must implement wherever the possibility of stormwater contamination exists. They may involve implementation of, or changes to, a process, an activity, or a physical structure. BMPs may be procedural (such as training in spill response procedures); structural (such as vegetated swales that serve as retention and treatment areas, or oil/water separators); or administrative (such as record keeping). In general, most BMPs are simple and can be put into practice immediately, but some may require installation of equipment, engineering, and significant capital expenditures. Whether simple or complex, though, effective BMPs can prevent pollutants from being added to stormwater.

For the purposes of this SWPPP, BMPs are divided into "baseline BMPs" that are applicable to all industrial activities at the airport, and "advanced BMPs" that are tailored to specific industrial activities. Baseline BMPs include procedures that have already been proven, are relatively simple, and are usually non-structural.

In some situations, where baseline BMPs are not adequate to solve stormwater pollution problems, advanced BMPs may be implemented. Advanced BMPs are tailored to address specific needs. They are usually structural and may involve changes in a process, containment and diversion, recycling, material substitution, or treatment. The interconnected grassy swales between the ramps, taxiway, and runway that serve as retention, filtering and treatment areas for stormwater runoff are examples of advanced BMPs. Advanced BMPs must conform to, or be consistent with, other facility development and environmental plans before they can be implemented.

This SWPPP identifies BMPs for each identified potential source of pollution, along with a schedule for implementation. BMPs must be reviewed by the pollution prevention team during the annual Comprehensive Site Compliance Inspection. The review evaluates each BMP and determines if it is effective in preventing pollution. If certain BMPs are not effective, they should be replaced with BMPs that are effective.

Co-permittees have the responsibility to implement and comply with the applicable BMPs identified in the SWPPP. Co-permittees are also responsible for ensuring inspections are performed, and records are maintained. JNU is responsible for complying with benchmark monitoring requirements for air transportation activities under Sector S of 2015-MSGP. Benchmark monitoring requirements are described in Section 5-B.4 of this SWPPP.

BMPs are categorized according to specific activities (e.g., fueling, vehicle maintenance, and painting). For each activity, applicable BMPs are generally prioritized by their effectiveness in reducing pollution loading in stormwater.

4-A.1 Baseline BMPs

Baseline BMPs are practices that are inexpensive, relatively simple, and applicable to a wide variety of industries and activities. JNU and tenants already have many of these measures in place for product loss prevention, accident and fire prevention, worker health and safety, or to comply with other environmental regulations. The purpose of this section is to highlight how these common practices can be continued, improved, or tailored to prevent stormwater pollution.

Baseline BMPs described in the following paragraphs are applicable to all industrial activities at this facility.

Good Housekeeping

Good housekeeping activities and organized workspaces are effective deterrents to accidental spills and leaks of pollutants into stormwater drains. The following subparagraphs describe procedures for various kinds of airport activities that promote good housekeeping.

Operation and Maintenance (O&M)

- Maintain clean floors by sweeping as much as possible to prevent carryout.
- Immediately contain spills with sorbents and rags.
- Do not discharge water from washing floors outside or into storm drains.
- Keep the shop and storage areas clean and orderly to prevent accidents and spills.
- Maintain vegetated swales in proper working order.
- Properly dispose of used oil, hydraulic fluids, and transmission fluids, by recycling used oil.
- Properly dispose of waste fuel, antifreeze, spent solvents paint, cleaners, etc. through the CBJ Household and Small Business Hazardous Waste Collection Program.
- Regularly pickup and dispose of garbage and waste material.
- Maintain dry and clean floors and ground surfaces by using brooms, shovels, vacuum cleaners, or cleaning machines.
- Make sure equipment is working properly.
- Routinely inspect for leaks or conditions that could lead to discharges of chemicals or contact of storm water with raw materials, intermediate materials, waste materials, or products.
- Ensure that spill cleanup procedures are understood by employees.
- Properly clean sediment and particulates from catchments, settling basins, and roadways. Washing sediments into storm drains should be avoided.
- Ensure that wash down of equipment at the fire hall is conducted in the bays so the wash down water is routed to the city sewer system. Monthly testing of fire-fighting equipment produces about a gallon of very dilute (97% water 3% film forming foam) that is discharged onto the asphalt and runs off into a sloped grass embankment.

Engine Maintenance and Repair Areas

- Perform engine maintenance and indoors.
- Clean up minor spills using rags, sorbents, or other dry methods.
- Maintain an organized of materials used in the maintenance shop.
- Properly dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers.
- Track recycling of waste material (i.e., used oil, antifreeze, spent solvents, batteries).
- Drain oil filters before disposal or recycling.
- Store cracked in non-leaking containers.
- Promptly transfer used fluids to the proper container. Do not leave partially-full drip pans or other open containers around the shop.
- Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets.

Material Storage Practices

- Keep Material Safety Data Sheet (MSDS) on file for all materials stored and used at the airport.
- Store pavement paint and pavement deicer in covered areas with concrete floors.
- Provide spill catchment and treatment areas around fuel tanks and fuel transfer stations.

- Store containers, drums, and bags away from direct traffic routes to prevent accidental spills.
- Stack containers according to manufacturers' instructions to avoid damaging the containers from improper weight distribution.
- Store containers on pallets or similar devices to prevent corrosion of the containers that can result when containers coming in contact with moisture on the ground.
- Clearly label chemical and/or hazardous waste containers. Hazardous waste labels indicate the contents of the container and appropriate personnel to contact in case of a problem or emergency. Emergency information is posted in areas where hazardous waste is stored.
- Store all flammable materials in identified protected areas away from ignition sources.
- Store stockpiled and containerized materials (fuels, paints, solvents, waste oil, antifreeze, batteries) in protected, secure locations away from drains and plainly label them.
- Provide detention and infiltration areas for runoff from sand storage areas.

Visual Inspections

Periodic visual inspections of catchment drains, outfalls, and vegetated swales help ensure that the systems are free of pollutants and in proper working order. Qualified facility personnel should perform periodic inspections using standardized checklists to ensure that all required areas are inspected. JNU will use the inspection checklists included in this SWPPP. Tenants may develop operation specific checklists.

Examples of potential problems that visual inspections might identify include:

- oil sheen or other contaminants on or in standing or running water;
- stains on the ground or unusual discoloration of earth or other surfaces at outfalls or drainage areas;
- stressed vegetation (e.g., dying trees, patches of dead grass);
- unclean areas (e.g., storage area in disarray, poor housekeeping); and
- poorly maintained, corroded, or damaged containers (e.g., drums, tanks).

Spill Prevention

Spills and leaks together can be one of the largest sources of storm water pollutants, and in most cases are avoidable. Establishing standard operating procedures such as safety and spill prevention procedures along with proper employee training can reduce these accidental releases.

Avoiding spills and leaks is preferable to cleaning them up after they occur, not only from an environmental standpoint, but also because spills cause increased operating costs and lower productivity.

Activities and areas where spills are likely to occur include:

- fuel loading and unloading areas;
- storage areas for deicing materials;
- equipment maintenance activities;
- dust or particulate generating processes; and
- waste disposal activities.

Loading and unloading areas, particularity fueling areas, have a high spill potential because the nature of the activity involves transfer of materials from one container to another. The spill potential is affected by the integrity of the container, the form of the chemical being transferred, the design of the transfer area (bermed vs. direct connection to the storm water collection system), the proximity of the transfer area to the storage area, and procedures for loading and unloading. The spill potential from all loading and unloading equipment, as well as storage and vehicle wash areas, will be evaluated during routine inspections.

Storage areas, both indoor and outdoor, are potential spill areas. Outdoor storage areas are exposed to storm water runoff and may provide direct contact between potential pollutants and storm water. Indoor storage areas may contaminate storm water if the drains in the storage area are connected to the storm sewer or if improper clean up procedures in case of a spill are used.

All equipment maintenance areas are potential sources of storm water contamination if the floor drains in these areas are connected to storm sewers (all floor drains at JNU facilities are connected to the CBJ sewer system).

Procedures that reduce the potential for spills will are as follows:

- maximize recycling, reclamation, and/or reuse of process materials to reduce the volume brought into the facility;
- install leak detection devices, overflow controls, and diversion berms;
- adopt effective housekeeping practices;
- adopt a materials flow/plant layout plan (i.e., do not store bags that are easily punctured near high-traffic areas where they may be hit by moving equipment or personnel);
- perform regular visual inspections to identify signs of wear on tanks, drums, containers, storage shelves, and berms and to identify sloppy housekeeping or other clues that could lead to potential spills;
- perform preventive maintenance on storage tanks, valves, pumps, pipes, and other equipment;
- use filling procedures for tanks and other equipment that minimize the risk of spills;
- use material transfer procedures that reduce the chance of leaks or spills;
- substitute less or non-toxic materials for toxic materials; and
- ensure appropriate security.

Spill Response

If a spill does occur, the following procedures can minimize the impact:

- immediately eliminate the source of the spill, if it is safe to do so, and contain the spill to the extent possible;
- report the spill to JNU's Operations and Maintenance Superintendent (789-4001);
- If the size of the spill warrants it, JNU's Operations and Maintenance Superintendent will notify ADEC through their emergency response line (465-5340-daytime, 1-800-478-9300-after hours).
- if any of the following criteria are met, the observer or the responsible party will call the marine safety detachment (487-5750) and the JNU's Operations and Maintenance Superintendent at 789-4001 or through airport security at 789-9539:
    1. if greater than 55 gallons spills including those within secondary containment,
    2. if spill is outside secondary containment and is likely to reach water, or
    3. beyond the capabilities on hand to deal with the spill.
- maintain a log of spills and corrective measures at JNU's Operations and Maintenance Superintendent's office. (log should include date, time and location of spill, substance and volume spilled, corrective measures taken and people and responders contacted.)
- provide copies of spill log to the airport manager.
- JNU's Operations and Maintenance Superintendent will ensure the responsible tenant cleans up the spill, if appropriate.

Fueling

Fueling procedures that reduce the potential for spills are as follows:

- inspect fueling areas at least annually to ensure BMPs are being implemented;

- based on inspections, take corrective actions at fueling stations as necessary and maintain a log of corrective action taken;
- provide secondary containment for aboveground storage tanks (ASTs);
- inspect fueling trucks for leaks, repair as necessary, and maintain log of any maintenance performed;
- at all fueling areas, post signs: "do not top off tanks";
- use automatic shut off valves for fuel pumps or provide personnel to observe fueling activities to ensure overfilling does not occur;
- report all spills to local airfield maintenance superintendent and maintain spill log;
- contain spills with sorbents; dispose of used sorbents appropriately; and
- inspect fueling areas after spills to ensure proper cleanup has been performed.

Vehicle Maintenance

Procedures for minimizing the risk of stormwater contamination from maintenance of cars, trucks, heavy equipment, ground support equipment & aircraft are summarized below:

- permanently plug floor drains that do not flow to sanitary sewer;
- maximize the use of non-chlorinated solvents over chlorinated solvents;
- minimize the number of different solvents used;
- use detergent-based or water-based cleaning agents where possible;
- centralize cleaning of small parts in parts washers;
- wipe, brush off, or steam-clean parts before using solvent, to reduce solvent use and extend solvent life;
- presoak dirty parts in "dirty solvent";
- use drip pans to collect leaking or dripping fluids and empty drip pans into collection drums promptly;
- use spigots, pumps, or funnels when dispensing and transferring materials to reduce the possibility of spills;
- completely drain oil filters and place filters in a sealed bag before disposal or recycling to minimize oil leakage into solid waste receptacles;
- drain all fluids completely from wrecked vehicles or "parts cars" immediately;
- store vehicles awaiting repair under cover if possible, or inspect these vehicles to ensure that they do not drip fluids onto the ground;
- store flammable and corrosive chemicals in suitable storage cabinets;
- store batteries within secondary containment;
- never mix waste solvents with any other wastes;
- segregate waste streams;
- recycle as available: degreasers, oil and oil filters, antifreeze, cleaning solutions, and batteries;
- maintain MSDS sheets as required by safety regulations;
- inspect vehicle maintenance areas to ensure oils, solvents, fuels, and degreasers are not poured into drains; take necessary corrective actions; and maintain a log of corrective measures taken; and
- sweep floors to maintain cleanliness; wash floors with a minimum amount of water needed so that the water will not be carried to storm drains or outdoors.

Chemical and Hazardous Materials Loading and Unloading

Procedures for minimizing the risk of stormwater contamination from hazmat loading and unloading operations are summarized below:

- use concrete to permanently plug indoor drains not connected to the sanitary sewer;
- whenever possible, load and unload where spills can be easily contained;
- contain spills using sorbents and dispose of used sorbents properly; and
- report all spills to JNU's Operations and Maintenance Superintendent (789-4001).

Painting

Procedures for minimizing the risk of stormwater contamination from painting operations are summarized below:

- store paints in a heated building to avoid freezing;
- avoid mixing paints or paint wastes with any other wastes;
- use latex paints whenever possible because of their less toxic nature, ease of use, and ease of cleanup;
- to the extent possible, perform sandblasting and painting indoors in a well-ventilated area;
- minimize the number of different solvents used; and
- collect paint, paint thinner, and solvents separately and dispose of properly.

Storage

Procedures for minimizing the risk of stormwater contamination from storage operations are summarized below:

- store all raw materials, products, and waste indoors, whenever possible;
- move all unused drums, tanks, and equipment indoors, or send the metal to the local recycler or landfill;
- store salt and urea indoors;
- remove and properly dispose of all drums containing hazardous waste unless they are stored appropriately in compliance with the hazardous waste regulations;
- store all flammable liquids in flammables cabinets;
- make sure all containers are clearly labeled;
- ensure that vehicles stored outdoors do not drip fluids onto the ground; and
- store snow so that snowmelt drains into vegetated swales or grassy areas as much as possible.

Employee Training

Annual employee training (Chapter 5) should be designed to:

- familiarize new employees with applicable BMPs and other SWPPP requirements;
- remind existing employees of applicable BMPs and other SWPPP requirements;
- introduce new storm water pollution prevention techniques recently incorporated into the plan; and
- provide a forum where new ideas for improving stormwater management can be shared.

Education

- Provide information to all tenants on importance of implementing BMPs.
- Provide a copy of relevant BMPs to each tenant.

4-B Advanced BMPs

In addition to the BMPs that are routinely incorporated at JNU, some advanced BMPs are being evaluated to further control potential stormwater pollution. This includes an evaluation of the installation of oil water separators at the major outfalls to Jordan and Duck Creek and other locations. In determining the effectiveness of the advanced BMPs, such things as engineering, maintenance, existing water quality, and costs will be evaluated.

Storm Drain Maintenance

JNU's Operations and Maintenance personnel are responsible for maintenance of the storm drain system. Tasks include:

- Inspect all storm drains in conjunction with other routine duties and perform necessary maintenance.
- Remove accumulated sediment from bottom of drains as needed.
- Repair any wash out areas to prevent erosion. Maintain vegetation in drainage swales.
- Mow the grassy swales between the runways and taxiways, and ensure that grass clippings or brush are not deposited into flowing water so as to block storm drains and culverts.
- Do not dispose of excess snow removed from runways and taxiways into water bodies.
- If sorbent booms are needed to absorb oil sheen, inspect frequently and replace as needed.

Chapter 5 Inspections, Visual Assessments, Stormwater Monitoring, & Training

5-A Overview

This chapter describes compliance activities required by the 2015 MSGP for air transportation activities. In general, JNU will conduct routine facility inspections for the overall airport facility (quarterly, except monthly during deicing season), quarterly visual assessments of representative stormwater discharges, benchmark monitoring of representative stormwater discharges, annual comprehensive site inspections, and appropriate training for JNU staff involved in the above activities.

Operators will conduct routine facility inspections of their respective lease areas, appropriate training for their staff, and will implement BMPs applicable to their operations. In addition, operators will supply deicing chemical usage information to JNU.

Effluent limitation guidelines apply to industrial activities at JNU. JNU will provide annual sampling for compliance with effluent limitations on Ammonia, which is a surrogate indicator for urea discharges.

There are no additional monitoring requirements from Indian Country or from the State of Alaska.

The following paragraphs describe the compliance activities is detail.

5-B Routine Facility Inspections

Routine facility inspections must be conducted for all areas of the facility where industrial materials or activities are exposed to stormwater, and for all stormwater control measures used to comply with the effluent limits in 2015 MSGP. Inspections must be performed during periods when the facility is in operation. Both JNU and Operators will perform routine facility inspections. JNU will conduct overall airport facility inspections. Operators will perform inspections of their respective operational areas.

Routine facility inspections must be conducted at a minimum: once each quarter, except monthly during deicing season for the duration of the permit coverage, (as defined below):

- January through March: once each month
- April through June: once during the quarter
- July through September: once during the quarter
- November and December: once each month

JNU will conduct overall airport facility inspections with qualified personnel. JNU will conduct these inspections during a period when a stormwater discharge is occurring.

The 2015 MSGP allows the Annual Comprehensive Site Inspection to count as one of the Routine Facility Inspections (see Section 5-E). JNU will conduct routine and annual comprehensive site inspections using a similar inspection log form (only the title of the form is different.)

Refer to Figure 3-2 in the attachments of this document for general layout of the airport, locations of outfalls, locations of inspection areas, and a summary of SWPPP requirements. The attachments also contain blank facility inspection logs which will be used by JNU for each inspection and then entered into the SWPPP record system. There is no requirement to submit routine facility inspection findings to DEC, unless specifically requested to do so.

5-C Quarterly Visual Assessments

JNU will conduct Quarterly visual assessments of storm water quality for the following outfalls:

- Outfall 1
- Outfall 2
- Outfall 3
- Outfall 6
- Outfall 7
- Outfall 8
- Outfall 9
- Outfall 10
- Outfall 11
- Outfall 12
- Outfall 13
- Outfall 14
- Outfall 15
- Outfall 16

JNU will conduct visual assessments once each quarter (as defined below), for the duration of the permit coverage:

- January through March;
- April through June;
- July through September; and
- October through December.

As part of the visual assessment, a stormwater sample will be collected from each outfall and a visual assessment will be carried out for each sample. Samples will be collected in such a manner that the samples are representative of the stormwater discharge.

The visual assessment must be made:

- Of a sample in a clean, clear glass or plastic container, and examined in a well-lit area;
- Of samples collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and the reason documented. In the case of snowmelt, samples must be taken during a period with a measurable discharge from the site; and
- For storm events, on discharges that occur at least 72 hours (3 days) from the previous discharge. The 72-hour (3-day) storm interval does not apply if it can be shown that less than a 72-hour (3-day) interval is representative for local storm events during the sampling period.

For each assessment, JNU will visually inspect the sample for the following water quality characteristics:

- Color;
- Odor;
- Clarity;
- Floating solids;
- Settled solids;

- Suspended solids;
- Foam;
- Oil sheen; and
- Other obvious indicators of stormwater pollution.

Refer to Figure 3-2 in the attachments of this document for outfall locations. The attachments also contain blank "Quarterly Visual Assessment Log" which will be filled out by JNU for each assessment and then entered into the SWPPP record system. There is no requirement to submit visual assessment findings to ADEC, unless specifically requested to do so.

JNU will make all quarterly assessment documentation available for tenants.

5-D Benchmark Monitoring

Airports that use 100,000 gallons or more of glycol-based deicing/anti-icing chemicals and/or 100 tons or more of urea on an average annual basis must monitor stormwater discharges on a quarterly basis from areas where deicing/anti-icing activities occur (2015 MSGP, Part 11–Sector-Specific Requirements for Industrial Activity, Subpart S; Sector S–Air Transportation).

JNU uses about 350 tons of urea on an average annual basis so benchmark sampling will be conducted at the following outfalls:

- Outfall 3 (ditch behind maintenance shop which drains to Duck Creek)
- Outfall 6 (outfall of terminal area drainage to Jordan Creek)
- Outfalls 7 and 8 (outfall to Jordan Creek from infield swales)
- Outfall 10 (outfall of Intersection G culvert to Gastineau Channel)
- Outfall 11 (Jordan Creek culvert outlet to Gastineau Channel)
- Outfall 16 (float pond outlet to Mendenhall River)

JNU will collect Grab samples from each of the above outfalls in 1-liter poly containers (provided by Admiralty Environmental in Juneau), which will be analyzed for the pollutants listed in Table 5-1.

Table 5-1 - Benchmark Monitoring Parameters

Parameter	Method	Benchmark Concentration
Biochemical Oxygen Demand (BOD_5)	405.1	30 mg/L
Chemical Oxygen Demand (COD)	410.4	120 mg/L
Ammonia	350.3	2.14 mg/L
pH	150.1	6.5 to 8.5 s.u.

The de-icing season for JNU extends from November 1 through March 31 which is the timeframe within which the four required benchmark monitoring events must be conducted. Consequently, for the first year of permit coverage, **benchmark monitoring will occur at least four times in the following period**:

- November 1, 2015 - March 31, 2016

If, after collection of 4 sequential samples, the average of the 4 monitoring values for any parameter does not exceed the benchmark listed in Table 5-1 (above), monitoring requirements for that parameter will have been fulfilled for the permit term. For averaging purposes, a value of zero will be used for any individual sample parameter which is determined to be less than the method detection limit. For sample values that fall between the method detection level and the quantification limit (i.e., a confirmed detection but below the level that can be reliably quantified), use a value halfway between zero and the quantification limit.

If, after collection of 4 quarterly samples, the average of the 4 monitoring values for any parameter exceeds the benchmark, it will be necessary to review control measures to determine if modifications are necessary to meet the effluent limits in this permit, and either:

- make the necessary modifications and continue quarterly monitoring until 4 additional quarters of monitoring have been completed for which the average does not exceed the benchmark; or
- make and document a determination that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice to meet the technology-based effluent limits or are necessary to meet the water-quality-based effluent limitations of the permit, in which case monitoring will continue once per year. EPA must be notified of such a determination in the next Discharge Monitoring Report.

All required monitoring must be performed during a storm event that results in an actual discharge from the site (defined as a "measurable storm event") that follows the preceding measurable storm event by at least 72 hours (3 days). The 72-hour (3-day) storm interval does not apply if it can be documented that less than a 72-hour (3-day) interval is representative for local storm events during the sampling period. In the case of snowmelt, the monitoring must be performed at a time when a measurable discharge occurs at the site.

If analytical samples cannot be collected because of adverse climatic conditions, the reason must be documented and retained on-site with other stormwater documentation.

JNU will submit benchmark monitoring lab results to ADEC, using ADEC's MSGP Industrial Discharge Monitoring Report (MDMR), no later than 30 days after receiving laboratory results for each sampling event.

Copies of all Benchmark Monitoring Logs, eNOI, and/or MDMR submittals must be entered into the SWPPP record system. Records must be kept for at least 3 years from the date that coverage under this permit expires or is terminated.

Refer to Figure B-1 in Attachment B of this document for outfall locations. Attachment D contains a blank "Benchmark Monitoring Log" and a blank "MDMR" form.

5-E Annual Comprehensive Site Inspection

JNU will perform the annual comprehensive site inspections that are required for the duration of the 2015 MSGP. This inspection should occur during the de-icing season (November 1 - March 31). If MSGP coverage is administratively continued after the expiration date of 2015 MSGP, JNU must continue to perform the inspections annually until coverage ends.

The annual comprehensive site inspection counts as one of the Routine Facility Inspections (see Section 5-B) as long as all components of both types of inspections are included.

Comprehensive site inspections must be conducted by qualified personnel with at least one member of the stormwater pollution prevention team participating. Comprehensive site inspections must cover all areas of the facility affected by the requirements of 2015 MSGP, including areas identified in the SWPPP as potential pollutant sources where industrial materials or activities are exposed to stormwater, and areas where spills and leaks have occurred in the past 3 years. The inspections must also include a review of all monitoring data. Inspectors must consider the results of the past year's visual assessments and benchmark monitoring when planning and conducting inspections.

Inspectors must examine the following:

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

The results of each Annual Comprehensive Site Inspection must be documented using the standardized form entitled "Facility Inspection Log". A copy of each inspection log will be maintained with the SWPPP records by JNU. Using information from the Facility Inspection Log, a copy of the ADEC "Annual Reporting Form", will be completed by JNU and a signed copy submitted to ADEC. JNU will make its inspection reports and annual reports available to tenants.

After each Annual Comprehensive Site Inspection, the JNU Pollution Prevention Team (see Chapter 2, paragraph 2-C) will convene to discuss the findings of the inspection and take any appropriate action. A completed JNU Pollution Prevention Team sign-in roster shall be maintained onsite, attached to the associated Facility Inspection Log.

Refer to Figure B-1 of Attachment B to this document for outfall locations. Attachment D includes a blank "Facility Inspection Log", a blank ADEC "Annual Reporting Form", and a blank "JNU Pollution Prevention Team sign-in roster" to be used by JNU in its recordkeeping obligations.

5-F Training

ADEC requires annual training for employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of 2015 MSGP. Each operator will provide training covering applicable BMPs, routine facility inspections, quarterly visual assessments, benchmark monitoring, reporting, and recordkeeping.

For JNU, annual Employee training will occur in November (to ensure seasonal employees are included), and will address the following areas:

- Contents of SWPPP;
- Control measures used at JNU (oil water separators, seepage pits, grassy swales);

- Good housekeeping (JNU operations and JNU tenants);
- Locations and use of spill response kits;
- Routine and Annual facility inspections;
- Quarterly visual Assessments;
- Benchmark monitoring
- Reporting and Recordkeeping.

Attachment D includes a blank "Annual Training Log" which must be filled out for each training session and then entered into the SWPPP record system.

Chapter 6 Calendar & SWPPP Team Meeting Log

The following calendar and roster is provided as a tool for recordkeeping. Additional inspection forms are located in Attachment D.

6-A SWPPP Calendar

Year:_____

Jan	Feb	March	April	May	June	July	August	Sept	October	Nov	Dec
De-icing season										De-icing season	
Facility inspection Date:____	Facility inspection Date:____	Facility inspection Date:____	Facility Inspection (once during the quarter) Date:_____			Facility Inspection (once during the quarter) Date:_____				Annual Comprehensive Facility Inspection Date:____	Facility Inspection Date:____
									JNU Pollution Prevention Team Meeting (after Annual Facility Inspection) Date:_____		
Visual Assessment (once during the quarter) Date:_____			Visual Assessment (once during the quarter) Date:_____			Visual Assessment (once during the quarter) Date:_____			Visual Assessment (once during the quarter) Date:_____		
Benchmark Monitoring (three times during the quarter) Dates:_____, _____, _____										Benchmark Monitoring (once during period) Date:_____	
										Training (one session) Date:_____	

6-B Annual JNU Pollution Prevention Team Meeting ROSTER

Meeting Date:

Attendee Name and Title	Attendee Signature