

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES  
MISSOURI CLEAN WATER COMMISSION



**MISSOURI STATE OPERATING PERMIT**

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92<sup>nd</sup> Congress) as amended,

Permit No. MO-0111210

Owner: City of St. Louis  
Address: 1200 Market Street, St. Louis, MO 63103

Continuing Authority: Airport Authority  
Address: 10701 Natural Bridge Road, St. Louis, MO 63145

Facility Name: Lambert, St. Louis International Airport  
Facility Address: St. Louis, MO 63145

Legal Description: See Page 2  
UTM Coordinates: See Page 2

Receiving Stream: See Page 2  
First Classified Stream and ID: See Page 2  
USGS Basin & Sub-watershed No.: See Page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

**FACILITY DESCRIPTION**

**Outfalls:** See Page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

September 1, 2012  
Effective Date

  
Sara Parker Pauley, Director, Department of Natural Resources

March 31, 2016  
Expiration Date

  
John Madros, Director, Water Protection Program

**FACILITY DESCRIPTION (continued):**

**Outfalls #001, #002, #003, #004, #005, #008, and #009 are historical outfalls no longer covered by this permit.**

**Outfall #006:** SIC # 4581 - Stormwater

Legal Description: Land Grant 7, St. Louis County

UTM Coordinates: X = 729332, Y = 4293375

Receiving Stream: Coldwater Creek (U)

First Classified Stream and ID: Coldwater Creek (C) (01706)

USGS Basin & Sub-watershed No.: (10300200-0802)

**Outfall #007:** SIC # 4581– Stormwater

Legal Description: Land Grant 2039, St. Louis County

UTM Coordinates: X = 725540, Y = 4294288

Receiving Stream: Cowmire Creek (U)

First Classified Stream and ID: Missouri River (P) (01604)

USGS Basin & Sub-watershed No.: (10300200-0801)

**Outfall #010:** SIC # 4581 – Stormwater

Legal Description: Land Grant 2476, St. Louis County

UTM Coordinates: X = 732224, Y = 4290154

Receiving Stream: Unnamed tributary to Maline Creek (U)

First Classified Stream and ID: Maline Creek (C) (01709)

USGS Basin & Sub-watershed No.: (07140101-0401)

**A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

| OUTFALL NUMBER AND EFFLUENT PARAMETER(S)                           | UNITS | FINAL EFFLUENT LIMITATIONS |                |                 | MONITORING REQUIREMENTS |                                  |
|--|-------|----------------------------|----------------|-----------------|-------------------------|----------------------------------|
|  |       | DAILY MAXIMUM              | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY   | SAMPLE TYPE                      |
| <b>Outfall #006</b><br><b>See Special Condition #9, Benchmarks</b> |       |                            |                |                 |                         | <b>See Special Condition #10</b> |
| Net Flow   | MGD   | *                          |                | *               | once/day                | calculated                       |
| Net Chemical Oxygen Demand   | mg/L  | *                          |                | *               | once/month              | calculated                       |
| Net Total Suspended Solids   | mg/L  | *                          |                | *               | once/month              | calculated                       |
| pH – Units -Downstream   | SU    | **                         |                | **              | once/month              | grab                             |
| Net pH – Units   | mg/L  | ***                        |                | ***             | once/month              | calculated                       |
| Net Ammonia as N   | mg/L  | 12.1                       |                | 4.6             | once/month              | calculated                       |
| Net Chloride   | mg/L  | *                          |                | *               | once/month              | calculated                       |
| Net Total Residual Chlorine  | mg/L  | *                          |                | *               | once/month              | calculated                       |
| Net Oil & Grease   | mg/L  | 15                         |                | 10              | once/month              | calculated                       |
| Net Ethyl Benzene  | mg/L  | 0.32                       |                | 0.32            | once/month              | calculated                       |
| Net Nitrate  | mg/L  | *                          |                | *               | once/month              | calculated                       |
| Net Cadmium, Total Recoverable                                     | mg/L  | *                          |                | *               | once/month              | calculated                       |
| Net Zinc, Total Recoverable  | mg/L  | *                          |                | *               | once/month              | calculated                       |
| Hardness as CaCO3  | mg/L  | *                          |                | *               | once/month              | calculated                       |
| Acetate  | mg/L  | *                          |                | *               | once/month              | grab                             |
| Ethylene Glycol  | mg/L  | *                          |                | *               | once/month              | grab                             |
| Propylene Glycol   | mg/L  | *                          |                | *               | once/month              | grab                             |

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE **OCTOBER 28, 2012**. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

|  |            |                        |           |      |
|--|------------|------------------------|-----------|------|
| Deicing Season (Nov-Apr)<br>Whole Effluent Toxicity (WET) test | % Survival | See Special Conditions | Once/year | grab |
|--|------------|------------------------|-----------|------|

MONITORING REPORTS SHALL BE SUBMITTED **ANNUALLY**; THE FIRST REPORT IS DUE **MAY 28, 2013**.

|  |            |                        |              |      |
|--|------------|------------------------|--------------|------|
| Non Deicing Season (May-Oct)<br>Whole Effluent Toxicity (WET) test | % Survival | See Special Conditions | Once/5 years | grab |
|--|------------|------------------------|--------------|------|

MONITORING REPORTS SHALL BE SUBMITTED **ONCE**; THE FIRST REPORT IS DUE **NOVEMBER 28, 2015**.

**A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)**

- \* Monitoring requirement only.
- \*\* pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.
- \*\*\* Net pH is measured in pH units and is not to be averaged.

**A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

| OUTFALL NUMBER AND EFFLUENT PARAMETER(S)    | UNITS | FINAL EFFLUENT LIMITATIONS |                |                 | MONITORING REQUIREMENTS |                |
|---|-------|----------------------------|----------------|-----------------|-------------------------|----------------|
|   |       | DAILY MAXIMUM              | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY   | SAMPLE TYPE    |
| <b>Outfall #007</b>                         |       |                            |                |                 |                         |                |
| <b>See Special Condition #9, Benchmarks</b> |       |                            |                |                 |                         |                |
| Flow  | MGD   | *                          |                | *               | once/day                | 24 hr estimate |
| Chemical Oxygen Demand                      | mg/L  | *                          |                | *               | once/month              | grab           |
| Total Suspended Solids                      | mg/L  | *                          |                | *               | once/month              | grab           |
| pH – Units                                  | SU    | **                         |                | **              | once/month              | grab           |
| Ammonia as N                                | mg/L  | 12.1                       |                | 4.6             | once/month              | grab           |
| Chloride                                    | mg/L  | *                          |                | *               | once/month              | grab           |
| Oil & Grease                                | mg/L  | 15                         |                | 10              | once/month              | grab           |
| Ethyl Benzene                               | mg/L  | 0.32                       |                | 0.32            | once/month              | grab           |
| Nitrate                                     | mg/L  | *                          |                | *               | once/month              | grab           |
| Hardness as CaCO <sub>3</sub>               | mg/L  | *                          |                | *               | once/month              | grab           |
| Cadmium, Total Recoverable                  | mg/L  | *                          |                | *               | once/month              | grab           |
| Zinc, Total Recoverable                     | mg/L  | *                          |                | *               | once/month              | grab           |
| Acetate                                     | mg/L  | *                          |                | *               | once/month              | grab           |
| Ethylene Glycol                             | mg/L  | *                          |                | *               | once/month              | grab           |
| Propylene Glycol                            | mg/L  | *                          |                | *               | once/month              | grab           |

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE **OCTOBER 28, 2012**. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

|                                    |            |                        |              |      |
|------------------------------------|------------|------------------------|--------------|------|
| Whole Effluent Toxicity (WET) test | % Survival | See Special Conditions | Once/5 years | grab |
|------------------------------------|------------|------------------------|--------------|------|

MONITORING REPORTS SHALL BE SUBMITTED **ONCE**; THE FIRST REPORT IS DUE **NOVEMBER 28, 2015**.

**A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)**

- \* Monitoring requirement only.
- \*\* pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

**A. FIANL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

PAGE NUMBER 5 of 16

PERMIT NUMBER MO-0111210

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

| OUTFALL NUMBER AND EFFLUENT PARAMETER(S) | UNITS | FINAL EFFLUENT LIMITATIONS |                |                 | MONITORING REQUIREMENTS |                |
|--|-------|----------------------------|----------------|-----------------|-------------------------|----------------|
|  |       | DAILY MAXIMUM              | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY   | SAMPLE TYPE    |
| <b><u>Outfall #010 (Note 1)</u></b>      |       |                            |                |                 |                         |                |
| Flow                                     | MGD   | *                          |                | *               | once/discharge          | 24 hr estimate |
| Chemical Oxygen Demand                   | mg/L  | *                          |                | *               | once/discharge          | grab           |
| Total Suspended Solids                   | mg/L  | *                          |                | *               | once/discharge          | grab           |
| pH – Units                               | SU    | **                         |                | **              | once/discharge          | grab           |
| Oil & Grease                             | mg/L  | *                          |                | *               | once/discharge          | grab           |

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE **OCTOBER 28, 2012**. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

\* Monitoring requirement only.

\*\* pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

**Note 1** Any discharge from this outfall shall be considered a bypass.

## B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Part I Standard Conditions dated October 1, 1980 and hereby incorporated as though fully set forth herein.

## C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
  - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
    - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    - (2) controls any pollutant not limited in the permit.
  - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
  - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.

3. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
  - (1) One hundred micrograms per liter (100 µg/L);
  - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
  - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
  - (4) The level established in Part A of the permit by the Director.
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

4. Report as no-discharge when a discharge does not occur during the report period.

5. Water Quality Standards

- (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
- (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
  - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
  - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
  - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
  - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
  - (5) There shall be no significant human health hazard from incidental contact with the water;
  - (6) There shall be no acute toxicity to livestock or wildlife watering;
  - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
  - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

C. SPECIAL CONDITIONS (continued)

6. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).

7. Land Disturbance.

Construction activities within the boundary of this site specific permit are, at a minimum, subject to the attached Stormwater Permit Template, MORA00000 and hereby incorporated as though fully set forth herein. For activities to be considered as permitted under this condition the permittee shall notify the State of Missouri in writing prior to construction. The permittee must submit:

- (a) A notification letter stating what is to be constructed along with a map outlining the construction area.
- (b) A post construction report, with any data collected, stating that construction is complete and the site is stabilized per the Stormwater Permit requirements.
- (c) An annual report of all activities within the last 12 months covered by this special condition. This report is to be submitted by October 28<sup>th</sup> of each year.

The conditions of Stormwater Permit Template shall be applicable only to activities within the mapped construction area for the time between when construction begins and the post construction report for that area is submitted.

8. Fuel Operations.

All fueling facilities present on the site shall adhere to applicable federal and state regulations concerning underground storage, above ground storage, and dispensers, including spill prevention, control and counter measures.

Before releasing water that has accumulated in secondary containment areas it must be inspected for hydrocarbon odor and/or presence of a sheen on a monthly basis. When the presence of hydrocarbons is indicated the water must be tested for Total Petroleum Hydrocarbons (TPH). The suggested analytical method for testing TPH is non-Halogenated Organic by Gas Chromatography method 8015 (also known as OA1 and OA2). However, if the permittee so desires to use other approved testing methods (i.e. EPA 1664), they may do so. If there is a detectable concentration of TPH, the water shall be taken for appropriate treatment. A summary of secondary containment sampling shall be submitted annually by October 28<sup>th</sup> of each year.

All spills must be **cleaned up** within 24 hours or as soon as possible. If fuel from a spill enters the storm sewer system in any amount outside of normal business hours, or if the permit holder cannot reach regional office staff for any reason, the permit holder is instructed to report the spill to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436. Leaving a message on a Department staff member voice-mail does not satisfy this reporting requirement.

Fuel Spills of greater than eight (8) gallons or which enter the storm sewer system within the boundary of this site specific permit are, at a minimum, subject to the attached General Permit Template, MOG940000 which is hereby incorporated as though fully set forth herein. For activities to be considered as permitted under this condition the permittee shall notify the State of Missouri in writing as soon as practicable after the spill. Fuel spills shall be cleaned up per this special condition if greater than eight (8) gallons is spilled or fuel in any amount enters the storm sewer system. For qualifying fuel spills the permittee must submit:

- (a) A notification letter stating when, where, what type of fuel has been spilled, and a map outlining the spill area.
- (b) An after action report that includes, at a minimum:
  - 1) The cause of the spill.
  - 2) The quantity spilled.
  - 3) The final fate of the spilled fuel.
  - 4) Data collected in accordance with the MOG940000 template.
- (c) An annual report of all activities within the last 12 months covered by this special condition. This report is to be submitted by October 28<sup>th</sup> of each year.

Based on the findings of the annual report and any other available information, the Department will determine the need for further investigation.

C. SPECIAL CONDITIONS (continued)

9. Benchmarks

This permit stipulates pollutant Benchmarks applicable to your discharge. The Benchmarks do not constitute direct numeric effluent limitations and do not constitute Best Available Technology (BAT) or Best Control Technology (BCT) level performance. A benchmark exceedance alone, therefore, is not a permit violation. Benchmark monitoring data are primarily for your use (and Department’s use) to determine the overall effectiveness of your SWMP and to assist you in knowing when additional corrective action may be necessary. If a sample exceeds a benchmark concentration you must review your SWMP and your BMPs to determine what improvements or additional controls are needed to reduce that pollutant in your storm water discharge(s). Monitored constituents above the Benchmark level believed to be the result of legacy chemical uses at the facility are not exempted from this requirement. Permittees are encouraged to contact the Department to formulate a plan for investigation and clean-up if legacy chemical uses are suspected to be the cause of exceedances.

The following Benchmarks have been set based on site specific historical performance. Any exceedances of a Benchmark shall result in a review of the SWMP and BMPs. The goal for the BMPs at the facility is improvement until these benchmarks are met during rainfall events up to a 10 year, 24 hour rain event.

There are fundamental differences in the nature of activities affecting airport storm water in the deicing season (November 1 through April 30) and the rest of the year (May 1 through October 31).

**Deicing Season (Nov-Apr) Benchmarks Table for Outfall #006**

| Parameter                  | Long-Term Average* | Daily Maximum |
|----------------------------|--------------------|---------------|
| Net Chemical Oxygen Demand | 129 mg/L           | 1135 mg/L     |
| Net Total Suspended Solids | 50 mg/L            | 100 mg/L      |

**Deicing Season (Nov-Apr) Benchmarks Table for Outfall #007**

| Parameter              | Long-Term Average* | Daily Maximum |
|------------------------|--------------------|---------------|
| Chemical Oxygen Demand | 41.5 mg/L          | 527 mg/L      |
| Total Suspended Solids | 59 mg/L            | 254 mg/L      |

**Non-Deicing Season (May-Oct) Benchmarks Table for Outfall #006**

| Parameter                  | Long-Term Average* | Daily Maximum |
|----------------------------|--------------------|---------------|
| Net Chemical Oxygen Demand | 20.2 mg/L          | 60.7 mg/L     |
| Net Total Suspended Solids | 50 mg/L            | 100 mg/L      |

**Non-Deicing Season (May-Oct) Benchmarks Table for Outfall #007**

| Parameter              | Long-Term Average* | Daily Maximum |
|------------------------|--------------------|---------------|
| Chemical Oxygen Demand | 21.9 mg/L          | 46.2 mg/L     |
| Total Suspended Solids | 59 mg/L            | 254 mg/L      |

\* The long-term average values that will be compared to these benchmarks will be calculated as the 5-year running median concentrations for each permit year (current permit year season plus previous four years seasons). The long-term average” values will be reported at the conclusion of each season.

If any above referenced benchmark(s) is exceeded the permittee must:

- a) Notify the Department in writing within 5 days.
- b) Undertake a review your SWMP and your BMPs to determine potential cause(s) and within 30 days submit a report. A final report that determines whether any improvement or additional controls are needed to reduce that pollutant in your storm discharge(s), and a progress report detailing corrective action(s) taken to address any exceedances shall be submitted to the Department in accordance with Special Condition 11(g)(ii). Failure to undertake and document the review, take the necessary action(s), or follow the DNR notification procedures stipulated in this permit are violations of this permit and will result in the issuance of a Notice of Violation (NOV).
- c) If the Department, in its best professional judgment, makes the determination that the permittee’s action(s) are not reasonable and appropriate, the Department will, at a minimum issue a Letter of Warning (LOW).

C. SPECIAL CONDITIONS (continued)

10. Calculation of Net parameters.

Net parameters shall be calculated by subtracting the up-stream value from the downstream value. The permittee shall submit for Department approval a mass balance approach to calculating net concentrations. Until such time at the permittee receives written approval from the Department of Natural Resources of the Department's approval any proposed mass balance the data submitted for Outfall #006 shall be the unmodified laboratory results taken from only this location. The permittee must provide locational data and access for sampling to any location accepted by the Department as an upstream location.

11. Storm Water Management Program (SWMP)

a) Requirements

- i) Within 60 days the permittee shall develop, implement, submit to the Department, and enforce a storm water management program (SWMP) designed to reduce the discharge of pollutants from the permittee's regulated facility to the maximum extent practicable, to protect water quality, satisfy the appropriate water quality requirements of the Missouri Clean Water Law, and ensure that tenets at the facility comply with the facility's Stormwater Pollution Prevention Plan and Good Housekeeping measures. The permittee's SWMP document shall include the following information for each of the three minimum control measures described in Special Condition Number 11(b) of this permit:
- (1) A description of the best management practices (BMPs) that the permittee will implement for each of the storm water minimum control measures;
  - (2) The measurable goals for each of the BMPs including, as appropriate, the months and years in which the permittee will undertake required actions, including interim milestones and the frequency of the action;
  - (3) The person primarily responsible for the SWMP, and the person(s) responsible for each minimum control measure if different from the primary responsible person; and
  - (4) The permittee shall implement a program designed to protect water quality in potentially affected waters and ensure that the permitted activities do not cause a violation of the Water Quality Standards;
  - (5) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria; and
  - (6) All paint, solvents, petroleum products and petroleum waste products (except fuels) under the control of the permittee shall be stored so that these materials are not exposed to storm water or have sufficient secondary containment to accumulate stormwater so that it may be assessed prior to proper disposal. Sufficient practices of spill prevention, control, and/or management shall be provided to prevent any spills of these pollutants from entering a water of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater;
  - (7) In addition to the requirements listed above, the permittee shall document the decision process for each minimum control measure and include rationale statements for each BMP and measurable goal defined;
  - (8) The permittee shall inspect any structures that function to prevent pollution of storm water or to remove pollutants from storm water and the facility in general to ensure that all BMPs are continually implemented and effective, and a monitoring schedule shall be specified in the SWMP document;

b) Minimum Control Measures

The Three (3) minimum control measures that shall be included in the permittee's SWMP document are:

i) Tenant Education and Outreach on Storm Water Impacts

The permittee shall implement a tenant education program to distribute educational materials to its tenants or conduct equivalent outreach activities about the impacts of storm water discharges on the permittee's discharge and steps tenants can take to reduce pollutants in storm water runoff. As part of the SWMP, the tenant education and outreach program shall include the following information, at a minimum:

- (1) The target pollutant sources the permittee's education program is designed to address;
- (2) Identification of target audiences for the permittee's education program who are likely to have significant storm water impacts (including commercial, industrial and institutional entities);
- (3) The permittee's outreach strategy, including the mechanisms (e.g., printed brochures, newspapers, media, workshops, etc.) to reach the tenants, and how many people expected to be reached over the permit term; and
- (4) A plan to evaluate the success of this minimum control measure.

C. SPECIAL CONDITIONS (continued)

ii) Illicit Discharge Detection and Elimination

The permittee shall develop, implement and enforce a program to detect and eliminate illicit discharges (as defined in 10 CSR 20-6.200) into the permittee's storm sewer system from the permittee's property. As part of the SWMP document, the permittee's illicit discharge detection and elimination program shall include the development and implementation of, at a minimum;

- (1) A storm sewer map showing the location of all outfalls and the names and location of all receiving waters of the state that receive discharges from those outfalls. The permittee shall describe the sources of information used for the map(s), and how the permittee plans to verify the outfall locations with field surveys. If already completed, the permittee shall describe how the map was developed and how the map will be regularly updated;
- (2) To the extent allowable under State, or local law, and consistent with the permittee's contractual obligations, effectively prohibit non-storm water discharges into the permittee's storm sewer system and implement appropriate response procedures and actions. The permittee shall identify the mechanism the permittee will use to effectively prohibit illicit discharges into the permittee's storm sewer system. If the permittee needs to develop this mechanism, describe the permittee's plan and implementation schedule. If the permittee's mechanism to prohibit such discharges is already developed, include a copy of the mechanism with the permittee's program; and
- (3) A plan and implementation schedule to detect and address non-storm water discharges, including discharges from illegal dumping and spills on the permittee's property, to the permittee's system. The permittee's plan shall include dry weather field screening for non-storm water flows and field tests of selected chemical parameters as indicators of discharge sources. The permittee's description shall address the following, at a minimum:
  - (a) Procedures for locating priority areas which include areas with higher likelihood of illicit connections (e.g., areas with older sanitary sewer lines, for example) or ambient sampling to locate impacted reaches;
  - (b) Procedures for tracing the source of an illicit discharge, including the specific techniques the permittee will use to detect the location of the source;
  - (c) Procedures for removing the source of the illicit discharge;
  - (d) A plan to ensure through appropriate actions that the permittee's illicit discharge prohibition mechanism is implemented;
  - (e) A plan to inform tenants of hazards associated with illegal discharges and improper disposal of waste. The permittee shall describe how this plan will coordinate with their education minimum measure and the pollution prevention/good housekeeping minimum measure programs; and
  - (f) Procedures for program evaluation and assessment of this minimum control measure.
- (4) Address the following categories of non-storm water discharges or flows (i.e., illicit discharges) only if the permittee identifies them as significant contributors of pollutants to the permittee's discharge: landscape irrigation, rising ground waters, uncontaminated ground water infiltration (as defined in 10 CSR 20-6.200), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, springs, water from crawl space pumps, footing drains, lawn watering, flows from riparian habitats and wetlands, and street wash water (discharges or flows from emergency firefighting activities are excluded from the effective prohibition against non-storm water and need only be addressed where they are significant sources of pollutants to waters of the state).
- (5) The permittee may also develop a list of other similar occasional incidental non-storm water that will not be addressed as illicit discharges. These non-storm water discharges shall not be reasonably expected (based on information available to the permittees) to be significant sources of pollutants to the permittee's discharge, because of either the nature of the discharges or conditions the permittee has established for allowing these discharges. The permittee shall document in their SWMP any local controls or conditions placed on the discharges. The permittee shall include a provision prohibiting any individual non-storm water discharge that is determined to be contributing significant amounts of pollutants.
- (6) The permittee should inventory and inspect tenants within their boundary that may contribute pollutants via storm water to the permittee's discharge.

C. SPECIAL CONDITIONS (continued)

iii) Stormwater Pollution Prevention Plan & Good Housekeeping

The permittee shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The purpose of the SWPPP and the Best Management Practices (BMPs) listed therein is to prevent pollutants from entering waters of the state. A deficiency of a BMPs means it was not effective in preventing pollution [10 CSR20-2.010(56)] of waters of the state, or failed to achieve compliance with benchmarks. Corrective action means the facility took steps to eliminate the deficiency. The SWPPP must be kept on-site. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document:

Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (Document number EPA 833-B-09-002) published by the United States Environmental Protection Agency (USEPA) in February 2009.

The SWPPP must include, at a minimum, the following:

- (a) An assessment of all storm water discharges associated with this facility. This must include a list of potential contaminants and an annual estimate of amounts that will be used in the described activities.
  - (b) A listing of specific BMPs and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter storm water. The Permittee shall adhere to the following minimum Best Management Practices:
    - (1) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of storm water from these substances.
    - (2) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
    - (3) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water or provide other prescribed BMP's such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
    - (4) Provide good housekeeping practices on the site to keep solid waste from entry into waters of the state.
    - (5) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property.
  - (c) The SWPPP must include a schedule for monthly site inspections and a brief written report. The inspections must include observation and evaluation of BMP effectiveness, deficiencies, and corrective measures that will be taken. The Department must be notified within fifteen (15) days by letter of any corrections of deficiencies. Deficiencies that consist of minor repairs or maintenance must be corrected within seven (7) days. Deficiencies that require additional time or installation of a BMP to correct should be detailed in the written notification. Installation of a treatment device, such as an oil water separator, may require a construction permit. Inspection reports must be kept on site with the SWPPP.
  - (d) A provision for designating an individual to be responsible for environmental matters.
  - (e) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas.
- c) Sharing Responsibility
- Implementation of one or more of the minimum measures may be shared with another entity, or another entity assumes responsibility for the measure if:
- i) The other entity, in fact, implements the control measure;
  - ii) The particular control measure, or component of that measure, is at least as stringent as the corresponding permit requirement; and
  - iii) The other entity agrees to implement the control measure on permittee's behalf. Written acceptance of this obligation is required. This obligation shall be maintained as part of the documented description of the permittee's storm water management program. If the other entity agrees to report on the minimum measure, the permittee shall supply the other entity with the reporting requirements contained in Special Condition 11(g) of this permit. If the other entity fails to implement the control measure on the permittee's behalf, then the permittee remains liable for any discharges due to that failure to implement.

C. SPECIAL CONDITIONS (continued)

- d) Reviewing and Updating the Storm Water Management Program
- i) Storm Water Management Program and Written Plan (SWMP) Review: The permittee shall do an annual review of the permittee's SWMP in conjunction with preparation of the annual report required under Special Condition 11(g); and
  - ii) SWMP Update: The permittee may change the SWMP during the life of the permit in accordance with the following procedures:
    - (1) Changes adding (but not subtracting or replacing) components, controls, or requirements to the SWMP may be made at any time upon written notification to the Department; and
    - (2) Changes replacing an ineffective or unfeasible BMP specifically identified in the SWMP with an alternate BMP may be requested at any time. Unless denied by the Department, changes proposed in accordance with the criteria below shall be deemed approved and may be implemented 60 days from submittal of the request. If request is denied, the Department will send the permittee a written response giving a reason for the decision. The permittee's modification requests shall include the following:
      - (a) An analysis of why the BMP is ineffective or infeasible (including cost prohibitive);
      - (b) Expectations on the effectiveness of the replacement BMP; and
      - (c) An analysis of why the replacement BMP is expected to achieve the goals of the BMP to be replaced.
    - (3) Change requests or notifications must be made in writing.
  - iii) SWMP Updates Required by the Department: Changes requested by the Department must be made in writing, set forth the time schedule for the permittee to develop the changes, and offer the permittee the opportunity to propose alternative program changes to meet the objective of the requested modification. All changes required by the Department will be made in accordance with 10 CSR 20-6.200. The Department may require changes to the SWMP as needed to:
    - (1) Address impacts on receiving water quality caused or affected by permittee's discharges;
    - (2) Include more stringent requirements necessary to comply with new federal or state statutory or regulatory requirements; or
    - (3) Include such other conditions deemed necessary by the Department to comply with the goals and requirements of the Missouri Clean Water Law.
- e) Monitoring, Recordkeeping, and Reporting
- i) Monitoring
    - (1) The permittee shall evaluate program compliance, the appropriateness of identified best management practices, and progress toward achieving identified measurable goals.
    - (2) When the permittee conducts monitoring, the permittee is required to comply with the following:
      - (a) Representative monitoring. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity;
      - (b) Test Procedures. Monitoring shall be conducted according to test procedures approved under 10 CSR 20-7.015(9)(A).
  - ii) Records of monitoring information shall include:
    - (1) The date, exact place, and time of sampling or measurements;
    - (2) The names(s) of the individual(s) who performed the sampling or measurements;
    - (3) The date(s) analyses were performed;
    - (4) The names of the individuals who performed the analyses;
    - (5) The analytical techniques or methods used; and
    - (6) The results of such analyses.
  - iii) Discharge Monitoring Report. Monitoring results collected as part of the routine illicit discharge detection and elimination program shall be documented, retained on site and made available upon request by EPA and DNR.
- f) Recordkeeping
- i) The permittee shall retain records of all activities requiring recordkeeping by the SWMP and monitoring information, including, all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, copies of Discharge Monitoring Reports (DMRs), a copy of the NPDES permit, policies and formal procedures for all minimum control measures and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report or application, or for the term of this permit, whichever is longer; and
  - ii) The permittee shall retain a written description of the SWMP required by this permit (including a copy of the permit language) at a location accessible to the Department. The permittee shall make the permittee's records, including the application and the description of the SWMP, available to the public if requested to do so in writing.

C. SPECIAL CONDITIONS (continued)

g) Reporting

i) The permittee shall submit a Stormwater Management Program Quarterly report in accordance with the following table:

| Stormwater Management Program report quarters | Report is due: |
|---|----------------|
| January, February, March (1st Quarter)        | April 28       |
| April, May, June (2nd Quarter)                | July 28        |
| July, August, September (3rd Quarter)         | October 28     |
| October, November, December (4th Quarter)     | January 28     |

That shall include:

- (1) Copies of all site inspections performed during the appropriate calendar quarter;
- (2) Summary of BMP effectiveness, deficiencies, and corrective measures based on the site inspections.

ii) The permittee shall submit a Stormwater Management Program Annual report reports by July 28 of each year. The report shall include:

The status of the permittee's compliance with permit conditions, an assessment of the appropriateness of the identified best management practices, progress towards achieving the statutory goal of reducing the discharge of pollutants to the maximum extent practicable, and the measurable goals for each of the minimum control measures including;

- (1) A summary of training conducted that includes class agendas and attendance sheets;
- (2) A summary of illicit discharge detection and elimination activities;
- (3) A summary of the effectiveness of the deicing collection system from the previous deicing season (November-April).
- (4) Results of information collected and analyzed, including monitoring data used to assess the success of the program at reducing the discharge of pollutants;
- (5) A summary of the storm water activities the permittee plans to undertake during the next reporting cycle (including an implementation schedule);
- (6) Proposed changes to the permittee's SWMP, including changes to any BMPs or any identified measurable goals that apply to the program elements;

C. SPECIAL CONDITIONS (continued)

12. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

| OUTFALL        | AEC   | FREQUENCY             | SAMPLE TYPE |
|----------------|-------|-----------------------|-------------|
| #006 (Nov-Apr) | 100 % | Once/ Year            | Grab        |
| #006 (May-Oct) | 100 % | Once per permit cycle | Grab        |
| #007           | 100 % | Once per permit cycle | Grab        |

| Dilution Series |               |              |              |                |                |                                       |   |
|-----------------|---------------|--------------|--------------|----------------|----------------|---------------------------------------|---|
| AEC%            | 100% effluent | 50% effluent | 25% effluent | 12.5% effluent | 6.25% effluent | (Control) 100% upstream, if available | (Control) 100% Lab Water, also called synthetic water |

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
  - (a) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.
  - (b) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analysis performed upon any other effluent concentration.
  - (c) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
- (2) The WET test will be considered a failure if mortality observed in effluent concentrations for either specie, equal to or less than the AEC, is significantly different (at the 95% confidence level;  $p = 0.05$ ) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available, synthetic laboratory control water may be used.
- (3) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.
- (4) If the effluent fails the test for BOTH test species, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met: Note: Written request regarding single species multiple dilution accelerated testing will be address by THE WATER PROTECTION PROGRAM on a case by case basis.
  - (i) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
  - (ii) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (5) Follow-up tests do not negate an initial failed test.
- (6) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.

C. SPECIAL CONDITIONS (continued)

- (7) Additionally, the following shall apply upon failure of the third follow up MULTIPLE DILUTION test The permittee should contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. If the permittee does not contact THE WATER PROTECTION PROGRAM upon the third follow up test failure, a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of the automatic trigger or DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
- (8) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
- (9) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
- (10) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department's WET test report form that was generated during the reporting period.
- (11) Submit a concise summary in tabular format of all WET test results with the annual report.

(b) Test Conditions

- (1) Test Type: Acute Static non-renewal
- (2) All tests, including repeat tests for previous failures, shall include both test species listed below unless approved by the Department on a case by case basis.
- (3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
- (4) Test period: 48 hours at the "Allowable Effluent Concentration" (AEC) specified above.
- (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
- (6) Tests will be run with 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent, and reconstituted water.
- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
- (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.
- (9) Whole-effluent-toxicity test shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms

D. SCHEDULE OF COMPLIANCE

A) Identification of source of residual chlorine

1. By **September 1, 2013**, the permittee shall identify the source of the net total residual chlorine increase in outfall #006.
2. By **March 1, 2014**, the permittee shall submit a plan for the elimination of discharges containing residual chlorine.
3. By **September 1, 2014**, the permittee shall verify that the discharge has been eliminated.

B) Evaluation of Deicing Runoff Collection and Detention System

1. By **September 1, 2013**, the permittee shall submit a BMP Evaluation report to describing current status of the Deicing runoff collections system. The report shall include: An updated operations procedure, details on the limitations of the rate at which the pump stations collect and pump deicing runoff, detailed flow analysis of the detention tank, and the handling of glycol/acetate contaminated snow. The purpose of the report is to evaluate cost effectiveness of different best management practices alternatives to increase the rate of capture and treatment of deicing chemicals or to reduce their usage.
2. By **March 1, 2014**, the permittee shall submit an application, if needed, for a construction permit to construct facilities as identified in the above referenced engineering report.
3. By **March 1, 2015**, the permittee shall submit a construction progress report.
4. By **September 1, 2015**, the permittee shall complete construction of approved facilities upgrades.

**MISSOURI DEPARTMENT OF NATURAL RESOURCES  
FACT SHEET  
FOR THE PURPOSE OF RENEWAL  
OF  
MO-011210  
LAMBERT, ST. LOUIS INTERNATIONAL AIRPORT**

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for an Industrial Facility  with widespread public interest .

**Part I – Facility Information**

Facility Type: IND - Airport  
Facility SIC Code(s): 4581

**Facility Description:**

International Airport covering approximately 2,500 acres across three watersheds

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?  
 - No.

Application Date: August 18, 2006  
Expiration Date: August 23, 2006  
Last DNR Inspection: Unknown                      In Compliance ;                      Non-Compliance

**OUTFALL(S) TABLE:**

| OUTFALL | DESIGN FLOW (CFS) | TREATMENT LEVEL | EFFLUENT TYPE | DISTANCE TO CLASSIFIED SEGMENT (MI) |
|---------|-------------------|-----------------|---------------|-------------------------------------|
| #006    | Variable          | BMPs            | Stormwater    | Greater than 5                      |
| #007    | Variable          | BMPs            | Stormwater    | Greater than 5                      |
| #010    | Variable          | BMPs            | Stormwater    | Greater than 5                      |

Please refer to Appendix A for outfall location and legal description.

NA – Not Applicable

**Receiving Water Body's Water Quality & Facility Performance History:**

In January of 2010 the U.S. Environmental Protection Agency (EPA) inspected Lambert, based on EPA's evaluation of the inspection report and facility records it appears to EPA that there have been significant violations of the Clean Water Act and the Airport's National Pollution Discharge Elimination System (NPDES) permit. At the time this fact sheet was written discussions between Lambert and EPA are on-going.

Comments:

Approximately 2,500 acres are covered by this permit with significant outdoor activities occurring 24 hours a day 365 days a year. The facility discharges to three different water sheds: Cowmire Creek (Outfall #007, 406 Acres), Maline Creek (Outfall #010, <5 Acres), and Coldwater Creek (Outfalls #001-#005, ~2,000 Acres) that runs in a culvert underneath Lambert from south to north.

Lambert-St. Louis International Airport's oversight organization, the St. Louis Airport Authority, requested that the permit be re-issued with Lambert's tenants as co-permittees. Co-permittee options were explored, however it was deemed to be not feasible for two main reasons: All co-permittees must have the same SIC code (this would have resulted in multiple, co-permittee, permits), and new tenants or changes in ownership or tenants leaving would all result in permit modifications (the permittee would be charged fees for every modification).

Outfalls #007 and #010 have discrete discharge locations and relatively simple activities occurring with their stormwater capture area. Outfall #007 captures stormwater runoff from the western end of one runway, and outfall #010 captures stormwater runoff from the deicing pad holding tank. The holding tank is used for flow equalization of water and de-icing chemicals prior to discharge to the sanitary sewer.

Outfalls #001-#005 are monitored at storm sewer inlets and Outfall #006 is within the main channel of the receiving stream, Coldwater Creek. Due to operational safety concerns of sampling crews being around the runways during storm events it was determined that Outfalls #001- #005, #008, and #009 needed to be replaced with a different point of compliance. It was decided that the best way to assess Lambert's impact to water quality in Coldwater Creek is to sample Coldwater Creek directly where it emerges from the culvert on the north side of the Lambert.

For the down-stream point of compliance to be meaningful a better understanding of the storm sewer system and up-stream sampling is needed. This is included in the permit's schedule of compliance. For determination of compliance, Lambert must monitor the quality of Coldwater Creek where it enters the permittee's property so that Lambert's actual impact, if any, to Coldwater Creek can be determined. If it is found during investigations of the storm sewer system, that stormwater enters the property from some location in addition to the currently identified location, then additional up-stream locations will be added, and a flow weighted composite method will be used to determine compliance with this permit.

The St. Louis Airport Authority is responsible for all violations of the final permit limitations. As such the St. Louis Airport Authority shall develop a Stormwater Management Program. The purpose of the Stormwater Management Program is primarily to prevent pollution from entering the Waters of the State and to provide a mechanism to determine the cause of the violation.

Anti-Back Sliding:

During the data review process of renewal of this permit it was noted that the permittee frequently exceed permit limitations for Chemical Oxygen Demand (COD) in Outfalls number #006, and #007, and Total Suspended Solids (TSS) in Outfall #007.

The source of COD in both Outfalls #006 and #007 was determined to be from winter (November 1 through April 30) deicing operations. The source of TSS in Outfall #007 is year round general erosion of soils surrounding the airport runways. Currently there are no water quality criteria for those two pollutants. The Department has determined that the effluent limitations for these parameters in these specific outfalls from the previous permit were a technical error made when issuing the previous permit under section 402(a)(1)(b).

In the State of Missouri, Water Quality Standards can be obtained from Missouri Clean Water Commission regulation 10 CSR 20-7.031. In the case of stormwater, the outfall only flows during wet-weather events, therefore it is reasonable to rely on the acute standard. In regards to Technology-based limits, normally a permit writer would refer to 10 CSR 20-7.015 (the effluent regulations regarding discharges from domestic sources and from Publically Owned Treatment Works (POTWs)), however this regulation does not adequately address stormwater discharges, Regulation 10 CSR 20-6.200 (regulations regarding stormwater permitting) does not address technology-based limits either, though section (6)(B)2. B. and C. respectively state that effluent limitations shall be based in part on "effluent guidelines promulgated by the Department or Environmental Protection Agency" and "best professional judgment of the permit writer."

"BMP's can apply" For these parameters, for this permit, at this time, as numeric effluent limitations are difficult to justify. Stormwater discharges can be highly intermittent, are usually characterized by highly variable flows occurring and carry a variety of pollutants whose source, nature and extent varies. The variability of effluent and efficacy of appropriate control measures makes setting uniform effluent limits for stormwater extremely difficult. It is often not reasonable to use traditional wastewater treatment technologies to control industrial stormwater discharges due to the absence of a steady flow of wastewater, control measures for such discharges tend to focus on pollution prevention and BMPs. EPA therefore determined that it is not feasible for the Agency to calculate numeric, technology-based limits for many of the discharges covered under the MSGP permit and, based on the authority of 40 CFR 122.44(k), chose to adopt non-numeric effluent limits. According to the fact sheet of the MSGP, EPA has long maintained that the combination of pollution prevention approaches and structural management practices required by the narrative limits are the

most environmentally sound way to control the discharge of pollutants in stormwater runoff from industrial facilities to meet the effluent limits.

According to the MSGP, EPA generally does not mandate the specific control measures operators must select, design, install and implement. It is up to the operator to determine what must be done to meet the applicable effluent limits. For example, Part 2.1.2.1 of the MSGP requires operators to minimize the exposure of raw, final, and waste materials to stormwater and runoff. How this is achieved will vary by facility. If feasible, some or all activities may be moved indoors. Even if activities or products cannot be moved indoors, they may be “covered” by roofing and/or tarps. In addition, some activities may be limited to times when exposure to precipitation is not likely. Each of these control measures is acceptable and appropriate in some circumstances. In this respect, the non-numeric effluent limits in the MSGP are analogous to more traditional numeric effluent limits, which also do not require specific control technologies as long as the limits are met. Moreover, the MSGP requires permittees to comply with non-numeric technology-based effluent limits by implementing control measures. Control measures can be administrative (including processes, procedures, schedules of activities, prohibitions on practices and other management practices), or engineered devices to prevent or reduce water pollution. The achievement of these non-numeric limits will result in the reduction or elimination of pollutants from the operator’s stormwater discharge. Such limits constitute this permit’s technology-based limits, expressed narratively per 40 CFR 122.44(k), and are developed using best professional judgment (BPJ).

In accordance with 40 CFR 122.44(k) the numeric effluent limitations for COD in Outfalls #006 and #007 and TSS in Outfall #007 will be replaced with BMP(s) to control the discharge of these pollutants.

**Benchmarks:**

The site-specific benchmarks were calculated using the site’s reported monitoring data from January 1, 2005 through December 31, 2010 and non-parametric statistical techniques. Benchmarks for daily maximum values were calculated as the 95<sup>th</sup> percentile value of the dataset for each season. “Long-term average” benchmarks were calculated as the 95<sup>th</sup> percentile median concentration using an empirical statistical technique known as “bootstrapping”. This technique is commonly used in cases where multiple estimates of a statistic such as a median are needed, and the distribution of the dataset is unknown. The method requires the development of a large number of samples using the original dataset. Each sample set has the same number of values as the original dataset, and is populated by randomly sampling from the original dataset with replacement. That is, each value in the new sample is equally likely to be any one of the original values. Meaningful statistics can then be calculated based on the dataset composed of the large number of samples, and these values are considered a representative estimate that characterizes the original dataset. In this case, 10,000 5-year seasonal samples were generated for COD and TSS at each outfall, and the 95<sup>th</sup> percentile median value was calculated for each combination of parameter and season.

The daily maximum benchmark concentrations, for both the deicing and non-deicing seasons were calculated separately as the average of the 95th percentile of each data set.

The “long term average” benchmark concentrations, for both the deicing and non-deicing season were calculated using the “bootstrap” technique described above as the 95<sup>th</sup> percentile of the median values (deicing season and non-deicing season of the historical data set used for this permit).

When evaluating follow-up activities based on a Benchmark exceedance it should be noted that based on the statistical methodology outlined above that at the 95% percentile that the daily maximum benchmark values can be expected to be exceeded once every 3.5 years and that such exceedances may, but do not necessarily, indicate unacceptable operation of the existing collection system.

**Biological Oxygen Demand:**

This parameter is being removed from the permit. Site specific data gathered over the last permit cycle clearly shows a strong correlation between COD and BOD concentrations. EPA’s Technical Development Document for Proposed Effluent Limitation Guidelines and Standards for the Airport Deicing Category, July 2009 (EPA 821-R-09-004), Section 7 identifies both BOD and COD Pollutants of Concern, however the Table 7.2 proposes using COD as a surrogate for BOD when sampling. EPA’s recommendation in conjunction with the site specific data provides sufficient justification to remove BOD monitoring from this permit and use COD as the monitored parameter.

**Net Parameters Calculation:**

Until such time at the permittee receives written approval from the Department of Natural Resources of the Department’s approval any proposed mass balance the data submitted for Outfall #006 shall be the unmodified laboratory results taken from only this location. The reason for implementing the net calculations in this manner is to prevent the permittee from having to apply for a permit modification every time a new source of flow onto their property. The consequence of this approach is that the Department must first approve and proposed mass balance and the permittee must provide locational data and access for sampling to any location accepted by the Department as an upstream location.

### **Schedule of Compliance:**

This permit contains two Schedules of Compliance.

#### **Identification of the source of Residual Chlorine.**

Discharge monitoring reports submitted by the permittee indicate that between the upstream and downstream sampling locations that there is a discharge source of residual chlorine. 10 CSR 20-7 Table A: Criteria for Designated Uses requires that residual chlorine in discharges be less than 20 µg/L (parts per billion). The EPA approved analytical detection limit is 130 µg/L, therefore there can be no detectable increase in residual chlorine in the receiving stream for Outfall #006.

#### **Evaluation of Deicing Runoff Collection and Detention system.**

The dual purpose of this schedule is to evaluate both the engineering controls (physical capacity of the deicing runoff collection and detention system), and the administrative controls (when to deice, how much deicer was used, handling and disposal of plowed/removed snow). The report shall evaluate potential changes that would decrease the amount of deicing chemicals that make it to the receiving stream. This can be achieved either through the reduction of chemical usage, or through a higher capture rate and/or expanded capture area.

### **Stormwater Management Program**

The permittee shall submit within 60 days of permit issuance the Storm Water Management Program (SWMP). The SWMP is intended to ensure that tenants operating on the Permittee's property comply with this State of Missouri NPDES Operating Permit. The objectives of the Stormwater Management Program are:

- To provide tenants appropriate training on the implementation of BMPs at the facility;
- To establish a program for illicit discharge detection and elimination;
- To implement a Stormwater Pollution Prevention Plan as discussed below;

To meet these objectives, Facility and tenant personnel will conduct inspections, perform storm water sampling and analysis, maintain structural controls, and perform a comprehensive annual SWPPP evaluation.

### **Stormwater Pollution Prevention Plan**

The Stormwater Pollution Prevention Plan (SWPPP) is intended to be consistent with the Airport's existing:

- Spill Prevention Control and Countermeasures (SPCC), and
- Underground Storage Tank Operation, Management, and
- Maintenance (OM&M) Plans for the Airport, and
- Airport Non-Regulated Tank OM&M Plan, and
- Airport Waste Management Plan (being prepared at the time of preparation of this SWPPP), and
- The facility's Environmental Management System (EMS).

The plans listed above, which are updated on a periodic basis, describe the potential pollutants at the Airport and also outline the facility's Best Management Practices (BMPs). Because the SWPPP & SPCC and other plans address interrelated material, it will be necessary to ensure that relevant changes to one document are reflected in the others. The SWPPP will be accessible to the Missouri Department of Natural Resources (MDNR) upon request and will be available for review by Airport personnel and Airport tenants and contractors as needed.

The objectives of the Stormwater Pollution Prevention Plan are to:

- Evaluate whether the BMPs and controls identified in the SWPPP are being implemented, and determine whether additional BMPs and controls need to be implemented and whether the SWPPP needs to be revised;
- Assess the effectiveness of BMPs to prevent or reduce pollutants in storm water discharges;
- Ensure that structural and administrative controls are inspected and maintained per the engineer, manufacturers, or designers specifications;
- Determine that sources of potential contamination are accurate, or whether additional sources are present;
- Determine whether the Facility map included in this SWPPP needs updating to reflect current conditions; and

To meet these objectives, Facility and tenant personnel will conduct inspections, perform storm water sampling and analysis, maintain structural controls, and perform a comprehensive annual SWPPP evaluation.

### **Waste Load Allocation Modeling:**

Coldwater Creek is on the 303(d) list as impaired water due to low dissolved oxygen (DO). Low DO is a warm weather problem and deicing activities are occurring in cold weather when natural DO levels are much higher. A water quality study was conducted by Golder Associates and CH2M Hill to assess receiving stream impacts from runoff from de-icing activities at the airport. While Chemical Oxygen Demand (COD) and 5-day Biological Oxygen Demand (BOD) levels were high instream, the stream temperatures were close to the freezing point, so the de-icing chemicals were not breaking down fast enough to lower DO levels below the 5 mg/L water quality criteria.

While the de-icing chemicals have high oxygen demand, they have low toxicity in the aquatic environment at the levels found in the water quality study.

Based on these findings, MDNR determined that technology-based effluent limits (TBELs), based on Best Management Practices (BMPs) are the appropriate pollution controls for COD and BOD discharges from Outfall 006.

### **303(d) List & Total Maximum Daily Load (TMDL):**

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Coldwater Creek is listed on the 1994 Missouri 303(d) List for low Dissolved Oxygen, the 2006 Missouri 303(d) List for Chloride, and the 2008 Missouri 303(d) List for Bacteria.

During the renewal process MDNR was unable to identify any potential source of Bacteria at the facility. As such this facility is not considered to be a source of Bacteria or considered to contribute to the impairment of Coldwater Creek for this pollutant.

As Identified in the facility's SWPPP both Magnesium and Sodium Chloride are both stored and used onsite and subject to not only the SWPPP, but the facility's Spill Prevention Control and Countermeasure (SPCC) Plan. Based on the administrative and engineering controls documented in the SWPPP/SPCC, MDNR believes it unlikely that this facility is contributing to the impairment of Coldwater Creek for Chloride, however monitoring shall be conducted over this permit cycle in order to assess Reasonable Potential.

As discussed in the Waste Load Allocation Modeling a water quality study was conducted by Golder Associates and CH2M Hill to assess receiving stream impacts from runoff from de-icing activities at the airport. While Chemical Oxygen Demand (COD) and 5-day Biological Oxygen Demand (BOD) levels were high instream, the stream temperatures were close to the freezing point, so the de-icing chemicals were not breaking down fast enough to lower DO levels below the 5 mg/L water quality criteria. As such this facility is not considered to contribute to the Low Dissolved Oxygen impairment of Coldwater Creek.

### **Summary of Reoccurring Submittals**

#### Monthly Submittals:

Discharge Monitoring Report. Final Effluent Limitations, Pages 3,4, and 5.

#### Quarterly Submittals:

Stormwater Management Program Quarterly Report. Special Condition 11, Page 13.

#### Annual Submittals:

Land Disturbance Report, Special Condition 7, Page 7.

Fuel Spill Summary Report, Special Condition 8, Page 7.

Secondary Fuel Containment Sampling, Special Condition 8, Page 7.

Stormwater Management Program Annual Report. Special Condition 11, Page 13.

## **Part II – Operator Certification Requirements**

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.020(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Not Applicable ; This facility is not required to have a certified operator.

**Part III – Receiving Stream Information**

**APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:**

**Receiving Stream Information for Outfall #006 (Coldwater Creek).**

Please mark the correct designated waters of the state categories of the receiving stream.

- Missouri or Mississippi River [10 CSR 20-7.015(2)]: Yes ; No
- Lake or Reservoir [10 CSR 20-7.015(3)]: Yes ; No
- Losing [10 CSR 20-7.015(4)]: Yes ; No
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]: Yes ; No
- Special Stream [10 CSR 20-7.015(6)]: Yes ; No
- Subsurface Water [10 CSR 20-7.015(7)]: Yes ; No
- All Other Waters [10 CSR 20-7.015(8)]: Yes ; No

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1<sup>st</sup> classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

**RECEIVING STREAM(S) TABLE (Outfall #006):**

| WATERBODY NAME  | CLASS | WBID  | DESIGNATED USES*          | 12-DIGIT HUC  | EDU**           |
|-----------------|-------|-------|---------------------------|---------------|-----------------|
| Coldwater Creek | (U)   | NA    | General Criteria          | 10300200-0802 | Ozark Highlands |
| Coldwater Creek | (C)   | 01706 | LWW, AQL, WBC (B)***, IND |               |                 |

\* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND).

\*\* - Ecological Drainage Unit

\*\*\* - UAA has not been conducted.

**Receiving Stream(s) Low-Flow Values Table (Outfall #006):**

| RECEIVING STREAM (U, C, P) | LOW-FLOW VALUES (CFS) |      |       |
|----------------------------|-----------------------|------|-------|
|                            | 1Q10                  | 7Q10 | 30Q10 |
| Coldwater Creek (U)        | 0.0                   | 0.0  | 0.0   |
| Coldwater Creek (C)        | 0.0                   | 0.1  | 0.1   |

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

**RECEIVING STREAM MONITORING REQUIREMENTS (Outfall #006, COLDWATER CREEK):**

Receiving water monitoring requirements are detailed in Part IV of this fact sheet.

**Receiving Stream Information for Outfall #007 (Cowmire Creek)**

Please mark the correct designated waters of the state categories of the receiving stream.

- Missouri or Mississippi River [10 CSR 20-7.015(2)]: Yes ; No
- Lake or Reservoir [10 CSR 20-7.015(3)]: Yes ; No
- Lossing [10 CSR 20-7.015(4)]: Yes ; No
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]: Yes ; No
- Special Stream [10 CSR 20-7.015(6)]: Yes ; No
- Subsurface Water [10 CSR 20-7.015(7)]: Yes ; No
- All Other Waters [10 CSR 20-7.015(8)]: Yes ; No

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1<sup>st</sup> classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

**RECEIVING STREAM(S) TABLE (OUTFALL #007, COWMIRE CREEK):**

| WATERBODY NAME                           | CLASS | WBID  | DESIGNATED USES*                         | 12-DIGIT HUC  | EDU**           |
|--|-------|-------|--|---------------|-----------------|
| Cowmire Creek                            | (U)   | NA    | General Criteria                         | 10300200-0801 | Ozark Highlands |
| Missouri River, Mouth To Gasconade River | (P)   | 01604 | IRR, LWW, AQL, SCR, DWS, IND, WBC (A)*** |               |                 |

\* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND).

\*\* - Ecological Drainage Unit

\*\*\* - UAA has not been conducted.

**RECEIVING STREAM(S) LOW-FLOW VALUES TABLE (OUTFALL #007, COWMIRE CREEK):**

| RECEIVING STREAM (U, C, P)                   | LOW-FLOW VALUES (CFS) |        |       |
|--|-----------------------|--------|-------|
|  | 1Q10                  | 7Q10   | 30Q10 |
| Cowmire Creek (U)                            | 0.0                   | 0.0    | 0.0   |
| Missouri River, Mouth To Gasconade River (P) |                       | 16,140 |       |

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

**RECEIVING STREAM MONITORING REQUIREMENTS (OUTFALL #007, COWMIRE CREEK):**

No receiving water monitoring requirements recommended at this time.

**Receiving Stream Information for Outfall #010 (Maline Creek)**

Please mark the correct designated waters of the state categories of the receiving stream.

- Missouri or Mississippi River [10 CSR 20-7.015(2)]: Yes ; No
- Lake or Reservoir [10 CSR 20-7.015(3)]: Yes ; No
- Lossing [10 CSR 20-7.015(4)]: Yes ; No
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]: Yes ; No
- Special Stream [10 CSR 20-7.015(6)]: Yes ; No
- Subsurface Water [10 CSR 20-7.015(7)]: Yes ; No
- All Other Waters [10 CSR 20-7.015(8)]: Yes ; No

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1<sup>st</sup> classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

**RECEIVING STREAM(S) TABLE (OUTFALL #010, MALINE CREEK):**

| WATERBODY NAME | CLASS | WBID  | DESIGNATED USES* | 12-DIGIT HUC  | EDU**                       |
|----------------|-------|-------|------------------|---------------|-----------------------------|
| Maline Creek   | (U)   | NA    | General Criteria | 07140101-0401 | Ozark/<br>Apple/<br>Joachim |
| Maline Creek   | (C)   | 01709 | LWW, AQL         |               |                             |

\* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND).

\*\* - Ecological Drainage Unit

**RECEIVING STREAM(S) LOW-FLOW VALUES TABLE (OUTFALL #010, MALINE CREEK):**

| RECEIVING STREAM (U, C, P) | LOW-FLOW VALUES (CFS) |      |       |
|----------------------------|-----------------------|------|-------|
|                            | 1Q10                  | 7Q10 | 30Q10 |
| Maline Creek (U)           | 0.0                   | 0.0  | 0.0   |
| Maline Creek (C)           | 0.0                   | 0.1  | 0.1   |

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

**RECEIVING STREAM MONITORING REQUIREMENTS (OUTFALL #010, MALINE CREEK):**

No receiving water monitoring requirements recommended at this time.

## **Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions**

### **ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:**

As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Not Applicable ;

The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

### **ANTI-BACKSLIDING:**

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

- Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.

### **ANTIDegradation:**

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)], the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- Renewal no degradation proposed and no further review necessary.

### **AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:**

As per [10 CSR 20-6.010(3)(B)], ... An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

### **BIOSOLIDS & SEWAGE SLUDGE:**

Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information regarding biosolids and sludge is located at the following web address: <http://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

Not applicable;

This condition is not applicable to the permittee for this facility.

### **COMPLIANCE AND ENFORCEMENT:**

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Not Applicable ;

The permittee/facility is not currently under Water Protection Program enforcement action.

### **PRETREATMENT PROGRAM:**

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

Not Applicable ;

The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

**REASONABLE POTENTIAL ANALYSIS (RPA):**

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Not Applicable ;

A RPA was not conducted for this facility.

**REMOVAL EFFICIENCY:**

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD<sub>5</sub>) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

Not Applicable ;

Influent monitoring is not being required to determine percent removal.

**SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&D):**

Sanitary Sewer Overflows (SSOs) are defined as an untreated or partially treated sewage release are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSO's have a variety of causes including blockages, line breaks, and sewer defects that allow excess storm water and ground water to (1) enter and overload the collection system, and (2) overload the treatment facility. Additionally, SSO's can be also be caused by lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations.

Additionally, Missouri RSMo §644.026.1 mandates that the Department require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities.

- Not applicable. This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

**SCHEDULE OF COMPLIANCE (SOC):**

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Applicable ;

The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)]. Please see the comment section in Part I of this fact sheet for more information.

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP):**

In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

Applicable ;

A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan.

**VARIANCE:**

As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable ;

This operating permit is not drafted under premises of a petition for variance.

**WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:**

As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

Not Applicable ;

Wasteload allocations were not calculated.

**WLA MODELING:**

There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Not Applicable ;

A WLA study was either not submitted or determined not applicable by Department staff.

**WATER QUALITY STANDARDS:**

Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

**WHOLE EFFLUENT TOXICITY (WET) TEST:**

A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Applicable :

Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(3)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc...); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by all facilities meeting the following criteria:

Facility (industrial) that alters its production process throughout the year.

**40 CFR 122.41(M) - BYPASSES:**

The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater) beyond the headworks. A bypass, which includes blending, is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-2.010(11) defines a bypass as the diversion of wastewater from any portion of wastewater treatment facility or sewer system to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

– Not Applicable, this facility does not bypass.

**303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):**

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Applicable :

Coldwater Creek is listed on the 1994 Missouri 303(d) List for low Dissolved Oxygen, the 2006 Missouri 303(d) List for Chloride, and the 2008 Missouri 303(d) List for Bacteria. Please see the comment section in Part I for details.

– This facility is not considered to be a source of Bacteria or considered to contribute to the impairment of Coldwater Creek for this pollutant.

– This facility is not considered to be a source of Chloride or considered to contribute to the impairment of Coldwater Creek for this pollutant.

– This facility is not considered to be a source of Chronic Oxygen Depletion via COD/BOD or considered to contribute to the impairment of Coldwater Creek.

**Part V – Effluent Limits Determination**

**Outfall #006 – Stormwater**

**EFFLUENT LIMITATIONS AND BENCHMARKS TABLE:**

| PARAMETER                          | UNIT   | BASIS FOR LIMITS | DAILY MAXIMUM   | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|------------------------------------|--|------------------|---|----------------|-----------------|----------|-----------------------------|
| FLOW                               | MGD  | 1                | *   |                | *               | NO       | */*                         |
| NET COD (NOV-APR)                  | MG/L   | 9                | 1135  |                | 129             | YES      | 360 / 180                   |
| NET COD (MAY-OCT)                  | MG/L   | 9                | 60.7  |                | 20.2            | YES      | 360 / 180                   |
| NET TSS                            | MG/L   | 1                | 100   |                | 50              | NO       | 100 / 50                    |
| pH                                 | SU   | 1                | **  |                | **              | YES      | 6 - 9                       |
| NET pH                             | SU   | 9                | *   |                | *               | YES      | ***                         |
| AMMONIA AS N                       | MG/L   | 2/3/5            | 12.1  |                | 4.6             | YES      | 15 / *                      |
| NET CHLORIDE                       | MG/L   | 1/2/9            | *   |                | *               | YES      | ***                         |
| NET TOTAL RESIDUAL CHLORINE        | MG/L   | 1/9              | *   |                | *               | YES      | ***                         |
| NET OIL & GREASE                   | MG/L   | 1                | 15  |                | 10              | NO       | 15 / 10                     |
| NET ETHYL BENZENE                  | MG/L   | 2/3              | 0.32  |                | 0.32            | YES      | ***                         |
| NET NITRATE                        | MG/L   | 1                | *   |                | *               | YES      | ***                         |
| HARDNESS AS CaCO <sub>3</sub>      | MG/L   | 1/9              | *   |                | *               | YES      | ***                         |
| NET CADMIUM                        | MG/L   | 1/9              | *   |                | *               | YES      | ***                         |
| NET ZINC                           | MG/L   | 1/9              | *   |                | *               | YES      | ***                         |
| ACETATE                            | MG/L   | 9                | *   |                | *               | YES      | ***                         |
| ETHYLENE GLYCOL                    | MG/L   | 9                | *   |                | *               | YES      | ***                         |
| PROPYLENE GLYCOL                   | MG/L   | 9                | *   |                | *               | YES      | ***                         |
| WHOLE EFFLUENT TOXICITY (WET) TEST | % Survival   | 11               | Please see WET Test in the Derivation and Discussion Section below. |                |                 |          |                             |
| MONITORING FREQUENCY               | Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below. |                  |   |                |                 |          |                             |

\* - Monitoring requirement only

\*\* - pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 units

\*\*\* - Parameter not previously established in previous state operating permit.

N/A – Not applicable

**Basis for Limitations Codes:**

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               |                                    |

**OUTFALL #006 – DERIVATION AND DISCUSSION OF LIMITS:**

- Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.

- Net Chemical Oxygen Demand (COD).**

The basis for elimination of pollutants in stormwater from this facility is the implementation of a Stormwater Management Program (SWMP)/ Stormwater Pollution Prevention Plan (SWPPP). The effectiveness of the SWMP/SWPPP will be assessed by evaluation stormwater samples against site-specific benchmarks. Please see page three of this fact sheet for the discussion on how the site-specific benchmarks were calculated.

There are fundamental differences in the nature of activities affecting airport storm water in the deicing season (November 1 through April 30) and the rest of the year (May 1 through October 31).

For outfall #006:

**Non-Deicing Season** Chemical Oxygen Demand the Long-Term Average benchmark is 20.2 mg/L and the Daily Maximum benchmark is 60.7 mg/L.

**Deicing Season** Chemical Oxygen Demand the Long-Term Average benchmark is 129 mg/L and the Daily Maximum benchmark is 1135 mg/L.

The previous permit did not require a Stormwater Management Program (SWMP)/ Stormwater Pollution Prevention Plan (SWPPP) and as such it is the Department’s expectation that when the same statistical analysis is done to actually sample data for this permits’ next renewal that at a minimum the data set’s standard deviation shall decrease.

- **Net Total Suspended Solids (TSS).** Effluent limitations from previous state operating permit shall be the initial site-specific benchmarks for this permit cycle.
- **pH.** Effluent limitation range is from 6.5 to 9.0 Standard pH Units (SU), as per the applicable section of 10 CSR 20-7.015. pH is not to be averaged. Staff has verified that the new pH range of 6.5 – 9.0 is attainable for this facility with no exceedances below 6.5 SU.
- **Net pH.** Monitoring only to determine if the Airport has the ability to significantly change the pH of the receiving stream.
- **Net Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU No mixing considerations allowed; therefore, WLA = appropriate criterion. As this is for stormwater only acute criteria will be considered.

| Season | Temp (°C) | pH (SU) | Total Ammonia Nitrogen CCC (mg/L) | Total Ammonia Nitrogen CMC (mg/L) |
|--------|-----------|---------|-----------------------------------|-----------------------------------|
| Summer | 26        | 7.8     | 1.5                               | 12.1                              |
| Winter | 6         | 7.8     | 3.1                               | 12.1                              |

Summer: April 1 – September 30

Acute WLA:  $C_e = ((var + 0.0)12.1 - (0.0 * 0.01))/var$   
 $C_e = 12.1 \text{ mg/L}$

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$  [CV = 0.6, 99<sup>th</sup> Percentile]

MDL = 3.9 mg/L (3.11) = 12.1 mg/L [CV = 0.6, 99<sup>th</sup> Percentile]

AML = 3.9 mg/L (1.19) = 4.6 mg/L [CV = 0.6, 95<sup>th</sup> Percentile, n =30]

Winter: October 1 – March 31

Acute WLA:  $C_e = ((var + 0.0)12.1 - (0.0 * 0.01))/var$   
 $C_e = 12.1 \text{ mg/L}$

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$  [CV = 0.6, 99<sup>th</sup> Percentile]

Use most protective number of  $LTA_c$  or  $LTA_a$ .

MDL = 3.9 mg/L (3.11) = 12.1 mg/L [CV = 0.6, 99<sup>th</sup> Percentile]

AML = 3.9 mg/L (1.19) = 4.6 mg/L [CV = 0.6, 95<sup>th</sup> Percentile, n =30]

- **Net Chloride.** Monitoring only. Coldwater Creek is on the 2006 303(d) list as being impaired for Chloride from Urban non-point sources. While it is not believed that the Airport is contributing to the impairment monitoring is reasonable and appropriate.
- **Net Total Residual Chlorine (TRC).** Monitoring only. While it is not believed that the Airport is discharging residual chlorine to Coldwater Creek monitoring shall be required. Please see the Schedule of Compliance portion of the Comments section of Part I of this fact sheet.
- **Net Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Net Ethyl Benzene.** Organic pollutant, effluent limitation for protection of aquatic life; 0.32 mg/L monthly average, 0.32 mg/L daily maximum.
- **Nitrate.** Effluent limitation has been modified to be consistent with the existing State of Missouri general permit MOR80F for Airports.

- **Hardness as CaCO<sub>3</sub>.** Monitoring only. To be used to determine if this facility has the potential to contribute to an excursion of water quality standards for hardness dependent metals

**Metals**

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and “The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 162 mg/L.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the Department, partitioning evaluations may be considered and site-specific translators developed.

| METAL        | CONVERSION FACTORS |         |
|--------------|--------------------|---------|
|              | ACUTE              | CHRONIC |
| Cadmium      | 0.924              | 0.889   |
| Chromium III | 0.316              | 0.860   |
| Chromium VI  | 0.982              | 0.962   |
| Copper       | 0.960              | 0.960   |
| Lead         | 0.720              | 0.720   |

Conversion factors for Cd and Pb are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 162 mg/L.

- **Net Cadmium, Total Recoverable.** Monitoring only to determine if this facility has the potential to contribute to an excursion of water quality standards for Cadmium
- **Net Zinc, Total Recoverable.** Monitoring only to determine if this facility has the potential to contribute to an excursion of water quality standards for Zinc.
- **Acetate.** Monitoring only to determine Acetate’s effect on measured COD concentrations.
- **Ethylene Glycol.** Monitoring only to determine Ethylene Glycol’s effect on measure COD concentrations.
- **Propylene Glycol.** Monitoring only to determine Ethylene Glycol’s effect on measure COD concentrations.
- **WET Test.** WET Testing schedules and intervals are established in accordance with the Department’s Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

There are fundamental differences in the nature of activities affecting airport storm water in the deicing season (November 1 through April 30) and the rest of the year (May 1 through October 31). WET testing will be required once every five years during non-deicing season (May 1 through October 31), and once per year, in January for deicing season (November 1 through April 30)

Allowable Effluent Concentration (AEC) calculations determine if the facility is to conduct single dilution or multiple dilution WET testing. Facilities that discharge to unclassified or Class C receiving streams, the AEC% is 100%. Facilities with less than 100% for an AEC% will have multiple dilution WET testing. Facilities that discharge to Lakes and have Acute WET testing, the AEC% is 100% due to [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] ZID not allowed for Lakes.

$$\text{Acute AEC\%} = ((\text{design flow}_{\text{cfs}} + 0) / \text{design flow}_{\text{cfs}})^{-1} \times 100 = 100\%$$

**Minimum Sampling and Reporting Frequency Requirements.**

| PARAMETER                     | SAMPLING FREQUENCY | REPORTING FREQUENCY |
|-------------------------------|--------------------|---------------------|
| FLOW*                         | ONCE/DAY           | ONCE/MONTH          |
| COD                           | ONCE/MONTH**       | ONCE/MONTH          |
| TSS                           | ONCE/MONTH**       | ONCE/MONTH          |
| PH                            | ONCE/MONTH**       | ONCE/MONTH          |
| AMMONIA AS N                  | ONCE/MONTH**       | ONCE/MONTH          |
| CHLORIDE                      | ONCE/MONTH**       | ONCE/MONTH          |
| OIL & GREASE                  | ONCE/MONTH**       | ONCE/MONTH          |
| ETHYL BENZENE                 | ONCE/MONTH**       | ONCE/MONTH          |
| NITRATE                       | ONCE/MONTH**       | ONCE/MONTH          |
| CHLORINE, TOTAL RESIDUAL      | ONCE/MONTH**       | ONCE/MONTH          |
| HARDNESS AS CaCO <sub>3</sub> | ONCE/MONTH**       | ONCE/MONTH          |
| CADMIUM, TOTAL RECOVERABLE    | ONCE/MONTH**       | ONCE/MONTH          |
| ZINC, TOTAL RECOVERABLE       | ONCE/MONTH**       | ONCE/MONTH          |
| ACETATE                       | ONCE/MONTH**       | ONCE/MONTH          |
| ETHYLENE GLYCOL               | ONCE/MONTH**       | ONCE/MONTH          |
| PROPYLENE GLYCOL              | ONCE/MONTH**       | ONCE/MONTH          |

\* Flow shall be estimated each time there is a storm event of 0.1 inches or greater that result in a discharge.

\*\* Stormwater samples shall be collected within the first 60 minutes of storm events of 0.1 inches or greater that result in a discharge. Stormwater samples shall be collected greater than 72 hours after the last precipitation event.

**Outfall #007 – Stormwater**

**EFFLUENT LIMITATIONS AND BENCHMARKS TABLE:**

| PARAMETER                          | UNIT   | BASIS FOR LIMITS | DAILY MAXIMUM   | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|------------------------------------|--|------------------|---|----------------|-----------------|----------|-----------------------------|
| FLOW                               | MGD  | 1                | *   |                | *               | No       | */*                         |
| COD (NOV-APR)                      | MG/L   | 9                | 527   |                | 41.5            | YES      | 360 / 180                   |
| COD (MAY-OCT)                      | MG/L   | 9                | 46.2  |                | 21.9            | YES      | 360 / 180                   |
| TSS                                | MG/L   | 1                | 254   |                | 59              | YES      | 100 / 50                    |
| pH                                 | SU   | 1                | **  |                | **              | YES      | 6 - 9                       |
| AMMONIA AS N                       | MG/L   | 2/3/5            | 12.1  |                | 4.6             | YES      | 5 / 5                       |
| OIL & GREASE                       | MG/L   | 1                | 15  |                | 10              | No       | 15/ 10                      |
| ETHYL BENZENE                      | MG/L   | 2/3              | 0.32  |                | 0.32            | YES      | */*                         |
| NITRATE                            | MG/L   | 1                | *   |                | *               | YES      | ***                         |
| HARDNESS AS CaCO <sub>3</sub>      | MG/L   | 1/9              | *   |                | *               | YES      | ***                         |
| CADMIUM                            | MG/L   | 1/9              | *   |                | *               | YES      | ***                         |
| ZINC                               | MG/L   | 1/9              | *   |                | *               | YES      | ***                         |
| ACETATE                            | MG/L   | 9                | *   |                | *               | YES      | ***                         |
| ETHYLENE GLYCOL                    | MG/L   | 9                | *   |                | *               | YES      | ***                         |
| PROPYLENE GLYCOL                   | MG/L   | 9                | *   |                | *               | YES      | ***                         |
| WHOLE EFFLUENT TOXICITY (WET) TEST | % Survival   | 11               | Please see WET Test in the Derivation and Discussion Section below. |                |                 |          |                             |
| MONITORING FREQUENCY               | Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below. |                  |   |                |                 |          |                             |

\* - Monitoring requirement only

\*\* - pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 units

\*\*\* - Parameter not previously established in previous state operating permit.

**Basis for Limitations Codes:**

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               |                                    |

**OUTFALL #007 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Chemical Oxygen Demand (COD).**  
The basis for elimination of pollutants in stormwater from this facility is the implementation of a Stormwater Management Program (SWMP)/ Stormwater Pollution Prevention Plan (SWPPP). The effectiveness of the SWMP/SWPPP will be assessed by evaluation stormwater samples against site-specific benchmarks. Please see page three of this fact sheet for the discussion on how the site-specific benchmarks were calculated.

There are fundamental differences in the nature of activities affecting airport storm water in the deicing season (November 1 through April 30) and the rest of the year (May 1 through October 31).

For outfall #007 the;

**Non-Deicing Season** Chemical Oxygen Demand the Long-Term Average benchmark is 21.9 mg/L and the Daily Maximum benchmark is 46.2 mg/L.

**Deicing Season** Chemical Oxygen Demand the Long-Term Average benchmark is 41.5 mg/L and the Daily Maximum benchmark is 527 mg/L.

The previous permit did not require a stormwater manager program and as such it is the Department’s expectation that when the same statistical analysis is done to actually sample data for this permits’ next renewal that at a minimum the data set’s standard deviation shall decrease.

- **Total Suspended Solids (TSS).**

The basis for elimination of pollutants in stormwater from this facility is the implementation of a Stormwater Management Program (SWMP)/ Stormwater Pollution Prevention Plan (SWPPP). The effectiveness of the SWMP/SWPPP will be assessed by evaluation stormwater samples against site-specific benchmarks. Please see page three of this fact sheet for the discussion on how the site-specific benchmarks were calculated.

For outfall #007 the;

Total Suspended Solids (TSS) Long-Term Average benchmark is 59 mg/L and the Daily Maximum benchmark is 254 mg/L.

- **pH.** Effluent limitation range is from 6.5 to 9.0 Standard pH Units (SU), as per the applicable section of 10 CSR 20-7.015. pH is not to be averaged. Staff has verified that the new pH range of 6.5 – 9.0 is attainable for this facility with no exceedances below 6.5 SU.
- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU No mixing considerations allowed; therefore, WLA = appropriate criterion. As this is for stormwater only acute criteria will be considered.

| Season | Temp (°C) | pH (SU) | Total Ammonia Nitrogen CCC (mg/L) | Total Ammonia Nitrogen CMC (mg/L) |
|--------|-----------|---------|-----------------------------------|-----------------------------------|
| Summer | 26        | 7.8     | 1.5                               | 12.1                              |
| Winter | 6         | 7.8     | 3.1                               | 12.1                              |

**Summer: April 1 – September 30**

Acute WLA:  $C_e = ((\text{var} + 0.0)12.1 - (0.0 * 0.01))/\text{var}$   
 $C_e = 12.1 \text{ mg/L}$

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile]

$MDL = 3.9 \text{ mg/L} (3.11) = 12.1 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile]

$AML = 3.9 \text{ mg/L} (1.19) = 4.6 \text{ mg/L}$

[CV = 0.6, 95<sup>th</sup> Percentile, n =30]

**Winter: October 1 – March 31**

Acute WLA:  $C_e = ((\text{var} + 0.0)12.1 - (0.0 * 0.01))/\text{var}$   
 $C_e = 12.1 \text{ mg/L}$

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile]

Use most protective number of  $LTA_c$  or  $LTA_a$ .

$MDL = 3.9 \text{ mg/L} (3.11) = 12.1 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile]

$AML = 3.9 \text{ mg/L} (1.19) = 4.6 \text{ mg/L}$

[CV = 0.6, 95<sup>th</sup> Percentile, n =30]

- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Ethyl Benzene.** Organic pollutant, effluent limitation for protection of aquatic life; 0.32 mg/L monthly average, 0.32 mg/L daily maximum.
- **Nitrate.** Limitation has been modified to be consistent with the existing State of Missouri general permit MOR80F for Airports.
- **Hardness as CaCO<sub>3</sub>.** Monitoring only. To be used to determine if this facility has the potential to contribute to an excursion of water quality standards for hardness dependent metals.

**Metals**

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and “The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 162 mg/L.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the Department, partitioning evaluations may be considered and site-specific translators developed.

| METAL        | CONVERSION FACTORS |         |
|--------------|--------------------|---------|
|              | ACUTE              | CHRONIC |
| Cadmium      | 0.924              | 0.889   |
| Chromium III | 0.316              | 0.860   |
| Chromium VI  | 0.982              | 0.962   |
| Copper       | 0.960              | 0.960   |
| Lead         | 0.720              | 0.720   |

Conversion factors for Cd and Pb are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 162 mg/L.

- **Cadmium, Total Recoverable.** Monitoring only to determine if this facility has the potential to contribute to an excursion of water quality standards for Cadmium
- **Zinc, Total Recoverable.** Monitoring only to determine if this facility has the potential to contribute to an excursion of water quality standards for Zinc.
- **Acetate.** Monitoring only to determine Acetate’s effect on measure BOD/COD concentrations.
- **Ethylene Glycol.** Monitoring only to determine Ethylene Glycol’s effect on measure COD concentrations.
- **Propylene Glycol.** Monitoring only to determine Ethylene Glycol’s effect on measure COD concentrations.
- **WET Test.** WET Testing schedules and intervals are established in accordance with the Department’s Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

Acute:

**No less than ONCE/PERMIT CYCLE:**

Other, while twice per year WET testing could be required based on the operations of the facility the area of capture for this outfall does not have the same intensity of activity as Outfall #006. Therefore a reduced rate is appropriate.

Allowable Effluent Concentration (AEC) calculations determine if the facility is to conduct single dilution or multiple dilution WET testing. Facilities that discharge to unclassified or Class C receiving streams, the AEC% is 100%. Facilities with less than 100% for an AEC% will have multiple dilution WET testing. Facilities that discharge to Lakes and have Acute WET testing, the AEC% is 100% due to [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] ZID not allowed for Lakes.

$$\text{Acute AEC\%} = ((\text{design flow}_{\text{cfs}} + 0) / \text{design flow}_{\text{cfs}})^{-1} \times 100 = 100\%$$

**Minimum Sampling and Reporting Frequency Requirements.**

| PARAMETER                     | SAMPLING FREQUENCY | REPORTING FREQUENCY |
|-------------------------------|--------------------|---------------------|
| FLOW*                         | ONCE/DAY           | ONCE/MONTH          |
| COD                           | ONCE/MONTH**       | ONCE/MONTH          |
| TSS                           | ONCE/MONTH**       | ONCE/MONTH          |
| PH                            | ONCE/MONTH**       | ONCE/MONTH          |
| AMMONIA AS N                  | ONCE/MONTH**       | ONCE/MONTH          |
| OIL & GREASE                  | ONCE/MONTH**       | ONCE/MONTH          |
| ETHYL BENZENE                 | ONCE/MONTH**       | ONCE/MONTH          |
| NITRATE                       | ONCE/MONTH**       | ONCE/MONTH          |
| HARDNESS AS CaCO <sub>3</sub> | ONCE/MONTH**       | ONCE/MONTH          |
| CADMIUM, TOTAL RECOVERABLE    | ONCE/MONTH**       | ONCE/MONTH          |
| ZINC, TOTAL RECOVERABLE       | ONCE/MONTH**       | ONCE/MONTH          |
| ACETATE                       | ONCE/MONTH**       | ONCE/MONTH          |
| ETHYLENE GLYCOL               | ONCE/MONTH**       | ONCE/MONTH          |
| PROPYLENE GLYCOL              | ONCE/MONTH**       | ONCE/MONTH          |

\* Flow shall be estimated each time there is a storm event of 0.1 inches or greater that result in a discharge.

\*\* Stormwater samples shall be collected within the first 60 minutes of storm events of 0.1 inches or greater that result in a discharge. Stormwater samples shall be collected greater than 72 hours after the last precipitation event.

**Outfall #010 – De-icing equalization tank emergency overflow**

**EFFLUENT LIMITATIONS TABLE:**

| PARAMETER            | UNIT   | BASIS FOR LIMITS | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|----------------------|--|------------------|---------------|----------------|-----------------|----------|-----------------------------|
| FLOW                 | MGD  | 1                | *             |                | *               | YES      | ***                         |
| COD                  | MG/L   | 1                | *             |                | *               | YES      | ***                         |
| TSS                  | MG/L   | 1                | *             |                | *               | YES      | ***                         |
| pH                   | SU   | 1                | **            |                | **              | YES      | ***                         |
| OIL & GREASE         | MG/L   | 1                | *             |                | *               | YES      | ***                         |
| MONITORING FREQUENCY | Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below. |                  |               |                |                 |          |                             |

\* - Monitoring requirement only

\*\* - pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 units

\*\*\* - Parameter not previously established in previous state operating permit.

N/A – Not applicable

**Basis for Limitations Codes:**

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               |                                    |

**OUTFALL #010 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Chemical Oxygen Demand (COD).** Monitoring only to determine if this facility has the potential to contribute to an excursion of water quality standards.
- **Total Suspended Solids (TSS).** Monitoring only to determine if this facility has the potential to contribute to an excursion of water quality standards.
- **pH.** Effluent limitation range is from 6.5 to 9.0 Standard pH Units (SU), as per the applicable section of 10 CSR 20-7.015. pH is not to be averaged.
- **Oil & Grease.** Monitoring only to determine if this facility has the potential to contribute to an excursion of water quality standards.

**Minimum Sampling and Reporting Frequency Requirements.**

| PARAMETER    | SAMPLING FREQUENCY | REPORTING FREQUENCY |
|--------------|--------------------|---------------------|
| FLOW         | ONCE/DISCHARGE     | ONCE/MONTH          |
| COD          | ONCE/DISCHARGE     | ONCE/MONTH          |
| TSS          | ONCE/DISCHARGE     | ONCE/MONTH          |
| pH           | ONCE/DISCHARGE     | ONCE/MONTH          |
| OIL & GREASE | ONCE/DISCHARGE     | ONCE/MONTH          |

## **Part VI: Finding of Affordability**

Pursuant to Section 644.145, RSMo., the Department is required to determine whether a permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or publically-owned treatment works.

Not Applicable;

The Department is not required to determine findings of affordability because the facility is not a **combined or separate sanitary sewer system for a publically-owned treatment works**.

## **Part VII – Administrative Requirements**

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

### **PUBLIC NOTICE:**

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The Public Notice period for this operating permit was from April 20, 2012 to May 20, 2012. Three comment letters were received during the public notice period and are addressed below.

### **Comment Letter 1:**

The Department received comments from Lambert-St. Louis International Airport on May 18, 2012, concerning the April 20, 2012 public notice of State Operating Permit Number MO-0111210 for Lambert-St. Louis International Airport in St. Louis County, Missouri. We appreciate your comments and your interest in protecting Missouri's state waters. Responses to the comments are below in the order they appeared in the letter:

#### **Comment Number 1 states:**

*The final effluent limitation table for Outfall #006 (page 3) lists the daily maximum and monthly average effluent limitations for ethylbenzene as 0.32 mg/L. However, page 13 of the Fact Sheet lists a daily maximum effluent limitation on 0.84 mg/L for ethylbenzene. The daily maximum effluent guideline for ethylbenzene should be adjusted to match the 0.84 mg/L value in the Fact Sheet for Outfalls #006 and #007.*

#### **Response to comment Number 1:**

10 CSR 20-7 Table A specifies 0.32 mg/L as the acute toxicity effluent limitation needed to be protective of aquatic life. The 0.84 mg/L in the fact sheet is a remnant for a previous draft that was during the renewal process identified as being a technical error. The Department is not allowed, by regulation, to initially issue a permit where the daily maximum effluent limitation exceeds the acute toxicity criterion of 10 CSR 20-7.

#### **Summary of changes made in response to comment Number 1:**

The fact sheet of this permit has been changed to be consistent with the correct permit limitation of 0.32 mg/L.

#### **Comment Number 2 states:**

*Page 7 of the draft permit, Special Condition 8, requires testing water in secondary containment structures for TPH when the presence of hydrocarbons is indicated, or at a minimum once per quarter. Consistent with the Airport's standard procedures, secondary containment water with visible sheen will not be discharged to the storm sewers. As an alternative, the Airport suggests that the water in secondary containment should be inspected on a monthly basis. Water should be analyzed for TPH when the presence of hydrocarbons is indicated (visible sheen). Reporting is proposed to be on an annual basis.*

Response to comment Number 2:

This is an acceptable alternative to the Department.

Summary of changes made in response to comment Number 2:

The second paragraph of Special Condition 8 has been changed to read:

Before releasing water that has accumulated in secondary containment areas it must be inspected for hydrocarbon odor and/or presence of a sheen on a monthly basis. When the presence of hydrocarbons is indicated the water must be tested for Total Petroleum Hydrocarbons (TPH). The suggested analytical method for testing TPH is non-Halogenated Organic by Gas Chromatography method 8015 (also known as OA1 and OA2). However, if the permittee so desires to use other approved testing methods (i.e. EPA 1664), they may do so. If there is a detectable concentration of TPH, the water shall be taken for appropriate treatment. A summary of secondary containment sampling shall be submitted annually by October 28<sup>th</sup> of each year.

Comment Number 3 states:

*Special Condition 13(g)(i) of the draft permit requires a quarterly report for the SWMP. In view of the complexity and unique character of Airport Operations, as an alternative the Airport suggests that the SWMP report to be prepared on an annual basis.*

Response to comment Number 3:

Based on the existing Stormwater Pollution Prevention Plan the Airport is already doing inspections and have procedures in place within the inspection documentation to note deficiencies, and corrective measures taken. The intent of this requirement is that the Airport submits copies of all inspections and follow-up that is already being done along with a short introduction that would highlight unusual occurrences. Given that the foundation of this permit is the Stormwater Management Program the Department does not feel that it is unreasonable to ask for copies of existing inspection reports on a quarterly basis.

Summary of changes made in response to comment Number 3:

No changes were made to the permit based on comment number 3.

Comment Number 4 states:

*Page 3 of the draft permit states that, "The daily maximum benchmark concentrations, for both the deicing and non-deicing seasons were calculated separately as the average of the 95<sup>th</sup> percentile of each data set." (Please note Comment 6 below.)*

*The USEPA has recommended use of the 99% as discussed in the Final Rule, 40 CFR Part 449, Effluent Limitations Guidelines and New Source Performance Standards for the Airport Deicing Category, published May 16, 2012. As quoted directly from this rule:*

*"To allow for possibly higher daily discharges, EPA has established the daily maximum limitation at a relatively high level (i.e., the 99<sup>th</sup> percentile). EPA has consistently used the 99<sup>th</sup> percentile as the basis of the daily maximum limitation in establishing limitations for numeric industries for many years; numerous courts have upheld EPA's approach." 77 Fed. Reg. 29185 (May 16, 2012).*

*and*

*"Compliance with daily maximum limitation is determined by a single daily value; therefore, EPA considers the 99<sup>th</sup> percentile to provide a reasonable basis for daily maximum limitation by providing an allowance for an occasional extreme discharge.) Id.*

*The Airport recommends use of daily maximum benchmarks based on 99% values to be aligned with established and proven USEPA guidelines.*

Response to comment Number 4:

EPA requires that BMP based stormwater permits be actively managed in an effort to further reduce the discharge of pollutants. The use of the 99th percentile value would result in an expected exceedance frequency of once every 17.6 years. The Department determined in order to fulfill the EPA requirement of active management, that an expected exceedance frequency greater than the length of the permit would be inappropriate. The 95<sup>th</sup> percentile was selected because the resulting expected exceedance frequency of once every 3.5 years fulfill the EP's active management requirement.

Summary of changes made in response to comment Number 4:

No changes were made to the permit based on comment number 4.

Comment Number 5 states:

*Section C. 9 of the draft permit (page 8) states that the goal of the benchmarks are met during rainfall events up to the 1-in-10 year, 24 hour precipitation event. However, this criterion is typically influenced by summer rainfall events. Seasonal differences in precipitation patterns should be recognized. The Airport proposes the following alternative language.*

*“The goal for the BMPs at the facility is improvement until these benchmarks are met during precipitation events up to the 1-in-10 year, 24-hour event for the specific season.*

Response to comment Number 5:

This is standard language for industrial stormwater permits that the Department has determined to be reasonable and achievable.

Summary of changes made in response to comment Number 5:

No changes were made to the permit based on comment number 5.

Comment Number 6 states:

*“Long term average” benchmark concentrations are discussed on page 8 of the draft permit. This section states:*

*\*The long-term average benchmark concentrations, for both the deicing and non-deicing season will be evaluated separately as the 95<sup>th</sup> percentile of the 5-year running median concentration. This will result in a dataset with 30 samples; six sample per year from the previous five years.*

*This description of the “long term average” may be misleading since the numbers are technically not averages.*

*The Airport suggests that the following description be used instead:*

*\*The long-term average values that will be compared to these benchmarks will be calculated as the 5-year running median concentrations for each permit year (current permit year season plus previous four years seasons). The long-term average values will be reported at the conclusion of each season.*

*Page 3 of the Fact sheet provides definitions for the daily maximum and long-term average benchmark concentrations, These definitions are discussed separately below:*

*The Fact Sheet states: “Benchmarks were calculated using an empirical statistical technique known as ‘bootstrapping’.”*

*However, the bootstrapping approach was used only in estimating the 5-year running median values. Ordinary percentile statistics were used in developing the maximum daily values. The airport suggests that following alternative language for the paragraph that more accurately describes the calculation:*

*The site-specific benchmarks were calculated using the site’s reported monitoring data from January 1, 2005 through December 31, 2010 and non-parametric statistical techniques. Benchmarks for daily maximum values were calculated as the 95<sup>th</sup> percentile value of the dataset for each season. “Long-term average” benchmarks were calculated as the 95<sup>th</sup> percentile median concentration using an empirical statistical technique known as “bootstrapping”. This technique is commonly used in cases where multiple estimates of a statistic such as a median are needed, and the distribution of the dataset is unknown. The method requires the development of a large number of samples using the original dataset. Each sample set has the same number of values as the original dataset, and is populated by randomly sampling from the original dataset with replacement. That is, each value in the new sample is equally likely to be any one of the original values. Meaningful statistics can then be calculated based on the dataset composed of the large number of samples, and these values are considered a representative estimate that characterizes the original dataset. In this case, 10,000 5-year seasonal samples were generated for COD and TSS at each outfall, and the 95<sup>th</sup> percentile median value was calculated for each combination of parameter and season.*

*Page 3 of the Fact Sheet also states: “The daily maximum benchmark concentrations, for both the deicing and non-deicing season were calculated separately as the average of the 95<sup>th</sup> percentile of each dataset.”*

*The Airport proposes that the following description would be more accurate:*

*“The daily maximum benchmark concentrations, for both the deicing and non-deicing season were calculated separately as the 95<sup>th</sup> percentile values if each historical data set.”*

*Similarly, the Airport suggests that the following be replaced as indicated:*

*Fact Sheet description: “The long-term average benchmark concentrations, for both the deicing and non-deicing seasons were calculated separately as the 95<sup>th</sup> percentile of a 5-year running median concentration.”*

Suggested change: The “long term average” benchmark concentrations, for both the deicing and non-deicing season were calculated using the “bootstrap” technique described above as the 95<sup>th</sup> percentile of the median values (deicing season and non-deicing season of the historical data set used for this permit.

Response to comment Number 6:

These are acceptable alternatives to the Department.

Summary of changes made in response to comment Number 6:

Suggested changes above have been incorporated into this permit.

Comment Number 7 states:

*Page 14 of the Fact Sheet states that, “While it is not believed that the Airport is discharging residual chlorine to Coldwater Creek monitoring shall be required.” The Airport will undertake the investigation of residual chlorine listed on page 16 of the draft permit (D. Schedule of Compliance). However, the permit should state that if no source of chlorine is found on the Airport, residual chlorine will be removed from the monitoring program.*

Response to comment Number 7:

If at the end of the investigation no source of chlorine is found on the Airport, the Airport may then request a permit modification requesting the removal of this parameter. A permit modification, or permit renewal, is the only process allowed under the current regulations that would allow for the removal of an effluent limitation.

Summary of changes made in response to comment Number 7:

No changes were made to the permit based on comment number 7.

**Comment Letter 2:**

The Department received comments from Mal Donohue on May 20, 2012, concerning the April 20, 2012 public notice of State Operating Permit Number MO-0111210 for Lambert-St. Louis International Airport in St. Louis County, Missouri. We appreciate your comments and your interest in protecting Missouri’s state waters. Our responses to the comments are below in the order they appeared in the letter:

Comment Number 1 states:

*Current permit limits for BOD = 30 mg/l monthly average and 45 mg/l daily maximum; proposed permit does not include BOD limits but only COD limits specific to each outfall with levels as high as 1135 mg/l daily maximum. Levels this high allow for degradation of water quality as a result of eutrophication of the receiving stream from organic loading.*

Response to comment Number 1:

All of these concerns were address previously within Part I – Facility Information, Pages 2 through 5 of this fact sheet.

Summary of changes made in response to comment Number 1:

No changes were made to the permit based on comment number 1.

Comment Number 2 states:

*Runoff from collected snow removed from the apron pavements contaminated with deicing agents for pavement and aircraft deicing is stored west of the airfield and discharges directly to a tributary of Coldwater Creek. The storm water runoff from this area is not collected in the deicing collection system that flows to sanitary treatment. Any storm water discharge from this location should be treated prior to discharge to the unnamed tributary to Coldwater Creek. Other airports collect and contain the organic contaminants from pavement and aircraft deicing rather than allowing these contaminants to runoff in storm water that is untreated to a the receiving stream.*

Response to comment Number 2:

It is the Department’s understanding that snow that has been potentially exposed to deicing agents is moved and stored on the west side of the airfield that while the storage area is paved the conveyance channel from the storage pad to Coldwater Creek is not. Typically given the rate of snow melt the unpaved conveyance channel is sufficient to absorbed most of the snow melt and prevents it from running into Coldwater Creek. Capture and treatment of potential source of contamination shall be addressed in Engineering Report required by the Evaluation of Deicing Runoff Collection and Detention System Portion of the Schedule of Compliance.

Summary of changes made in response to comment Number 2:

No changes were made to the permit based on comment number 2.

Comment Number 3 states:

*Storm water runoff, containing deicing effluent from pavement and aircraft deicing from the SLAC Ramp is not collected (except for the three gates at UPS) for sanitary treatment prior to discharge and should be added to the Airport deicing and collection system for sanitary treatment prior to discharge. Storm water runoff from the Signature Ramp is uncollected for deicing runoff and should be collected and added to the Airport deicing and collection system for sanitary treatment prior to discharge.*

Response to comment Number 3:

Capture and treatment of potential source of contamination shall be addressed in Engineering Report required by the Evaluation of Deicing Runoff Collection and Detention System Portion of the Schedule of Compliance.

Summary of changes made in response to comment Number 3:

No changes were made to the permit based on comment number 3.

Comment Number 4 states:

*Oil/water separator within the storm water sewer system at the western end of the A Concourse should be a part of the proposed NPDES Permit; daily inspection reports and sampling/analytical data should be added to the monitoring, record keeping and reporting requirements of the proposed NPDES Permit.*

Response to comment Number 4:

The Department has an existing General Permit for oil/water separators

(<http://www.dnr.mo.gov/env/wpp/permits/issued/G140000.pdf>). Page 2 of 5 specifically states:

*Unless required by the Department, an NPDES permit is not required for any facility that installs an oil/water separator voluntarily, (i.e. not required to do so by any state or federal regulation or law) and whose oil and grease originates only from vehicle parking, and/or fueling such as parking lots, gas stations, convenience stores, and truck stops.*

As this specific oil/water separator was installed voluntarily it is exempt from the general permit, and therefore does not merit specific requirements in this permit. The operations and maintenance of this Best Management Practice is covered in the existing Stormwater Pollution Prevent Plan.

Summary of changes made in response to comment Number 4:

No changes were made to the permit based on comment number 4.

Comment Letter 3:

The Department received comments from Beveridge & Diamond PC submitted on behalf of American Airlines, Alaska Airlines, Continental Airlines, Delta Airlines, Federal Express, Southwest Airlines, and United Airlines on May 21, 2012, concerning the April 20, 2012 public notice of State Operating Permit Number MO-0111210 for Lambert-St. Louis International Airport in St. Louis County, Missouri. We appreciate your comments and your interest in protecting Missouri's state waters. Our responses to the comments are below in the order they appeared in the letter:

Comment Number 1 States:

**Section C (Special Conditions), 9 (Benchmarks)**

**Comment:** *The method of determining compliance with the long-term average benchmark needs to be clearly stated.*

**Discussion:** *The long-term average benchmark concentration is footnoted with the following statement:*

*The long-term average benchmark concentrations, for both the deicing and non-deicing seasons will be calculated separately as the 95th percentile of the 5-year running median concentration. This will result in a dataset with 30 samples; six samples per year from the previous five years.*

*This footnote appears to reference the method in which the benchmark value was derived. Specifically, a statistical bootstrap technique was utilized to generate 10,000 datasets from the available data. For each dataset, the median value was determined and the 95<sup>th</sup> percentile of the 10,000 median values was determined and established as the long-term average benchmark value. Given that the median value was calculated for each dataset, the median of the most recent 30 monitoring values should be calculated and compared to the long-term average benchmark value.*

**Recommendation:** *The footnote to the long-term average benchmark value should be replaced with the following (or similar) statement The long-term average shall be calculated at the median of the most recent 30 monitoring values for each season.*

**Comment:** *The daily maximum benchmark value is based on percentile calculations and as such, is likely to be exceeded once every 3.5 years. This exceedance frequency should be described in the fact sheet and should be considered prior to issuance of a Letter of Warning.*

**Discussion:** *In the development of potential benchmark values, the 80th, 95th and 99<sup>th</sup> percentile values were calculated for the available data and the 95th percentile was selected as the daily maximum benchmark value. In contrast to the 99th percentile*

value which has an exceedance frequency of once every 17.6 years, MDNR selected the 95<sup>th</sup> percentile which has an exceedance frequency of once every 3.5 years. Thus, it is likely that at least one discharge monitoring observation will exceed the daily maximum benchmark value by chance alone. This 'exceedance' may not indicate a failure of the existing collection system but, rather, may constitute a reflection of its normal and acceptable functioning. As a result, the required review of the airports SWMP and BMPs may not indicate any potential causes of the exceedance and may further indicate that no improvements or additional controls are necessary.

**Recommendation:** To provide future MDNR enforcement staff with necessary background when determining whether to issue a Notice of Warning under Special Condition 9(c), additional language should be provided in the Fact Sheet (Page #3, Benchmarks) to clarify that the daily maximum benchmark values can be expected to be exceeded once every 3.5 years and that such exceedances may, but do not necessarily indicate unacceptable operation of the existing collection system.

Response to comment Number 1:

The Permittee also requested a clarification of "long-term average" and what exactly is meant. As noted above the permit has been changed using the language suggested by the Permittee. The recommendation that the Department include within the fact sheet a clarification that statistically the permittee should exceed their benchmarks every 3.5 years is acceptable to the Department.

Summary of changes made in response to comment Number 1:

The flowing has been added to the Benchmark Section on page #3 of the Fact Sheet.

When evaluating follow-up activities based on a Benchmark exceedance it should be noted that based on the statistical methodology outlined above that at a 95% percentile that the daily maximum benchmark values can be expected to be exceeded once every 3.5 years and that such exceedances may, but do not necessarily, indicate unacceptable operation of the existing collection system.

Comment Number 2 States:

**Section D (Schedule of Compliance), B (Evaluation of Deicing Runoff Collection and Detention System)**

**Comment:** The draft permit requires the preparation and submission of an engineering report which includes a detailed analysis of the existing collection system and a description of the methods of handling contaminated snow. Further, the report is to evaluate cost-effectiveness of different best management alternatives to increase the rate of capture of deicing chemicals.

In contrast, the Fact Sheet (Page #3, Schedule of Compliance) further expands the scope of the report to include administrative controls (e.g., how much deicer to use).

We believe that the requirement to re-evaluate the deicing runoff collection and detention system is inappropriate at this time, excessive in scope and should be deleted from the schedule of compliance section of the permit.

**Discussion:** The purpose of the deicing runoff collection system is to reduce discharges of stormwater containing deicing chemicals to the environment. Studies conducted by Golder Associates and CH2M Hill, which are referenced in the Fact Sheet, indicate that the discharge of deicing chemicals do not impact the receiving water and do not reduce dissolved oxygen concentrations to below the water quality criteria. Based on these findings MDNR concluded that discharges from the airport are not considered to contribute to the low dissolved oxygen impairment of the Coldwater Creek (Fact Sheet p. 5) and determined that technology-based effluent limitations are appropriate for this discharge (Fact Sheet p. 4).

In the development of technology-based limitations, MDNR utilized monitoring data reflecting the operation of the existing deicing runoff collection system to calculate acceptable performance criteria for the drainage basins receiving storm water runoff impacted by deicing operations. These performance criteria were then established as benchmark values. Given that the performance of the existing system was utilized to derive the benchmark values to assure that the existing system is operated and maintained in a manner consistent with past practice it is unclear whether there is any basis for an engineering study designed to explore potential changes to the current system.

The scope of the engineering report also is unclear. First, the report is to "evaluate cost effectiveness of different best management practices alternatives to increase the rate of capture and treatment of deicing chemicals." Given that there are no water quality impacts associated with the existing discharge if the benchmark values are maintained and the fact that the airport has already selected and invested considerable capital in the existing system, the conduct of an extensive alternatives analysis is unnecessary and unsupported in the absence of a finding that the current system does not constitute BCT/BAT for this location.

We believe that the permit's inclusion of an engineering study scoped in this way may reflect MDNR's expectation that EPA would promulgate effluent limitation guidelines substantially similar to those that were proposed in 2009. 74 Fed. Reg. 44676 (August 28, 2009). The Agency has now promulgated the final rule and, in it, has declined to establish specific collection percentage targets or numeric effluent limitations for ADF runoff from existing sources. 77 Fed. Reg. 29168 (May 16, 2012). While it might have been reasonable to require a study of alternatives when the expectation was that EPA would establish BCT/BAT guidelines

*at levels that current systems at the airport were unable to achieve, the promulgation of the effluent guidelines without such standards eliminates that potential justification for a study.*

*Similarly, the conduct of an engineering study prior to exceedance of any benchmark value is unnecessary because the goal of the study is unclear. Specifically, the objective of the study would be to improve system collection efficiency to achieve the benchmark values. However, if no exceedances have been observed, there is no clear objective to the study.*

*Lastly, the Fact Sheet (page 3) indicates that the engineering study should also consider administrative controls and specifically indicates that decisions such as when to deice and how much deicer to use should be considered. Federal Aviation Regulations (FAR) established by the U.S. Federal Aviation Administration (FAA) prohibit takeoff when frost, ice, or snow adheres to airplane wings, propellers, or control surfaces. The FARs also prohibit takeoff any time that frost, ice, or snow can reasonably be expected to adhere to the airplane, unless the operator has an approved ground deicing/anti-icing program that includes holdover timetables. Because the amount of aircraft and pavement deicing materials required varies by precipitation type and intensity, limitations on the amount of deicing materials utilized cannot be established while providing for safe transportation. Thus, state administrative controls related to 'when to deice' or 'how much deicer is used' cannot be implemented because those controls could directly conflict with federal law in the form of Federal Aviation Regulations.*

**Recommendation:** *The air carriers serving Lambert St. Louis International Airport recommend that Section D.B (Evaluation of Deicing Runoff Collection and Detention System) be deleted from the permit. Should exceedances of the established benchmark values occur at a frequency above the predicted frequency, we are not opposed to conducting an engineering review of the existing collection system to identify methods to assure that the system is operated and maintained in an effective manner. In any case, however, the engineering study should be limited to the existing system and any requirement to evaluate administrative controls related to 'when to deice' and 'how much deicer to apply' should be deleted from the study.*

Response to comment Number 2:

The Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500 dated October 18, 1972) Title I, Section 101, (b) states:

*It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his authority under this Act. It is further the policy of the Congress to support and aid research relating to the prevention, reduction, and elimination of pollution, and to provide Federal technical services and financial aid to State and interstate agencies and municipalities in connection with the prevention, reduction, and elimination of pollution.*

The Department agrees that the studies conducted by Golder Associates and CH2M Hill indicate that, at this time, that the discharge of deicing chemicals do not impact the receiving water and do not reduce dissolved oxygen concentrations to below the water quality criteria, however the law explicitly mandates reduction as a goal. In general the two methods to reduce discharges of pollution is either expanded capture or reduced usage.

During the renewal the Department identified three potential limiting factors that limit deicing capture. As currently designed the inlet drains of the deicing capture system are designed for flows up to 0.1 inch per hour (CP#22-5678, December 8, 1998), the holding tank that receives the captured flows discharges to the local POTW and has on occasion filled up that requires a shutdown of the deicing capture system, and the area that is captured by the deicing system could be expanded (e.g. a new pad at the end of the taxi ways).

The Department is aware of the Federal Aviation Regulations (FAR) as established by the U.S. Federal Aviation Administration (FAA), and was in no way trying to suggest implementation of any state administrative controls that would conflict with the existing FAR. What is recommended is that the Airport/Airlines work together to ensure that current deicing chemicals are used ONLY when required by the FAR and that alternative chemical at least be considered.

The Department believes that the requirement to re-evaluate the deicing runoff collection and detention system is appropriate at this time and not excessive in scope.

Summary of changes made in response to comment Number 2:

Minor wording changes were made to Schedule of Compliance and supporting information within the factsheet.

**DATE OF FACT SHEET: APRIL 9, 2012**

**COMPLETED BY:**

Steven W Lang, P.E., Environmental Engineer

NPDES Permits Unit

Permitting and Engineering Section

Water Protection Program

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## **Appendices**

### **APPENDIX A – OUTFALL LOCATION/DESCRIPTION:**

#### **Outfall #001:** SIC # 4581 - Stormwater

Legal Description: Land Grant 1993, St. Louis County

UTM Coordinates: X = 728475, Y = 4291934

Receiving Stream: Coldwater Creek (U)

First Classified Stream and ID: Coldwater Creek (C) (01706)

USGS Basin & Sub-watershed No.:(10300200-0802)

#### **Outfall #002:** SIC # 4581 - Stormwater

Legal Description: Land Grant 1993, St. Louis County

UTM Coordinates: X = 728507, Y = 4291830

Receiving Stream: Coldwater Creek (U)

First Classified Stream and ID: Coldwater Creek (C) (01706)

USGS Basin & Sub-watershed No.:(10300200-0802)

#### **Outfall #003:** SIC # 4581 - Stormwater

Legal Description: Land Grant 2524, St. Louis County

UTM Coordinates: X = 728711, Y = 4291947

Receiving Stream: Coldwater Creek (U)

First Classified Stream and ID: Coldwater Creek (C) (01706)

USGS Basin & Sub-watershed No.:(10300200-0802)

#### **Outfall #004:** SIC # 4581 - Stormwater

Legal Description: Land Grant 2524, St. Louis County

UTM Coordinates: X = 729163, Y = 4291692

Receiving Stream: Coldwater Creek (U)

First Classified Stream and ID: Coldwater Creek (C) (01706)

USGS Basin & Sub-watershed No.:(10300200-0802)

#### **Outfall #005:** SIC # 4581 - Stormwater

Legal Description: Land Grant 3096, St. Louis County

UTM Coordinates: X = 729409, Y = 4292569

Receiving Stream: Coldwater Creek (U)

First Classified Stream and ID: Coldwater Creek (C) (01706)

USGS Basin & Sub-watershed No.:(10300200-0802)

#### **Outfall #006:** SIC # 4581 - SIC # 45XX - Stormwater

Legal Description: Land Grant 7, St. Louis County

UTM Coordinates: X = 729332, Y = 4293375

Receiving Stream: Coldwater Creek (U)

First Classified Stream and ID: Coldwater Creek (C) (01706)

USGS Basin & Sub-watershed No.:(10300200-0802)

#### **Outfall #007:** SIC # 4581 – Stormwater

Legal Description: Land Grant 2039, St. Louis County

UTM Coordinates: X = 725540, Y = 4294288

Receiving Stream: Cowmire Creek (U)

First Classified Stream and ID: Missouri River (C) (1604)

USGS Basin & Sub-watershed No.:(10300200-0801)

#### **Outfall #008:** SIC # 4581 – Stormwater

Legal Description: Land Grant 2524, St. Louis County

UTM Coordinates: X = 727682, Y = 4292454

Receiving Stream: Coldwater Creek (U)

First Classified Stream and ID: Coldwater Creek (C) (01706)

USGS Basin & Sub-watershed No.:(10300200-0802)

**APPENDIX A – OUTFALL LOCATION/DESCRIPTION, CONTINUED**

**Outfall #009:** SIC # 4581 – Stormwater

Legal Description: Land Grant 1196, St. Louis County

UTM Coordinates: X = 727437, Y = 4292065

Receiving Stream: Coldwater Creek (U)

First Classified Stream and ID: Coldwater Creek (C) (01706)

USGS Basin & Sub-watershed No.: (10300200-0802)

**Outfall #010:** New outfall. SIC # 4581 – Stormwater

Legal Description: Land Grant 2476, St. Louis County

UTM Coordinates: X = 732155, Y = 4290214

Receiving Stream: Unnamed Tributary to Maline Creek (U)

First Classified Stream and ID: Maline Creek (C) (01709)

USGS Basin & Sub-watershed No.: (07140101-0401)