

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, 92nd Congress) as amended,

Permit No. MO-0114812

Owner: City of Kansas City
Address: 414 East 12th Street, Kansas City, MO 64106

Continuing Authority: Kansas City International Airport
Address: 601 Brazilia Avenue, Kansas City, MO 64153

Facility Name: Kansas City International Airport
Address: 601 Brazilia Avenue, Kansas City, MO 64153

Legal Description: NW ¼, NE ¼, NW ¼, Sec. 22, T52N, R34W, Platte County
UTM Coordinates: X=352646, Y=4352654

Receiving Stream: Unnamed Tributary to Todd Creek (U)
First Classified Stream and ID: Todd Creek (C) (0316)
USGS Basin & Sub-watershed No.: (10240012-0710)

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

FACILITY DESCRIPTION

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.

June 1, 2013
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

March 31, 2015
Expiration Date

John Madras, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #001 - Airport, SIC-#4581

Industry, Stormwater runoff /non-contact cooling water/fire protection discharging from Berlin Sedimentation Basin
Legal Description: NE ¼, NW¼, Sec. 22, T52N, R34W, Platte County
UTM Coordinates: X= 352625, Y= 4352629
Receiving Stream: Unnamed Tributary to Todd Creek (U)
First Classified Stream and ID: Todd Creek (C) (0316)
USGS Basin & Sub-watershed No.: (10240012-0710)
Design Flow: 8.74 MGD (value is based on 1 inch precipitation)
Average Flow: Dependent on precipitation
Non-contact cooling water flow: 0.03 MGD once in October

Outfall #002 - Airport, SIC-#4581

Industry, Stormwater runoff
Legal Description: NW¼, SW¼, Sec. 15, T52N, R34W, Platte County
UTM Coordinates: X= 352487, Y= 4353074
Receiving Stream: Unnamed Tributary to Todd Creek (U)
First Classified Stream and ID: Todd Creek (C) (0316)
USGS Basin & Sub-watershed No.: (10240012-0710)
Design Flow: 0.82 MGD (value is based on 1 inch of precipitation)
Average Flow: Dependent on precipitation

Outfall #003 - Airport, SIC-#4581

Industry, Stormwater runoff
Legal Description: SW¼, NW¼, Sec. 15, T52N, R34W, Platte County
UTM Coordinates: X= 352256, Y= 4353634
Receiving Stream: Unnamed Tributary to Todd Creek (U)
First Classified Stream and ID: Todd Creek (C) (0316)
USGS Basin & Sub-watershed No.: (10240012-0710)
Design Flow: 1.3 MGD (value is based on 1 inch of precipitation)
Average Flow: Dependent on precipitation

Outfall #004 - Airport, SIC-#4581

Industry, Stormwater runoff
Legal Description: NW¼, NE¼, Sec. 22, T52N, R34W, Platte County
UTM Coordinates: X= 353004, Y= 4352622
Receiving Stream: Todd Creek (U)
First Classified Stream and ID: Todd Creek (C) (0316)
USGS Basin & Sub-watershed No.: (10240012-0710)
Design Flow: 2.9 MGD (value is based on 1 inch of precipitation)
Average Flow: Dependent on precipitation

Monitoring Location #SM1- Airport, SIC-#4581

Downstream Monitoring
Legal Description: SW¼, NE¼, Sec. 15, T52N, R34W, Platte County
UTM Coordinates: X=353302, Y=4353766
Stream: Todd Creek (C) (0316)
First Classified Stream and ID: Todd Creek (C) (0316)
USGS Basin & Sub-watershed No.: (10240012-0710)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 3 of 11	
					PERMIT NUMBER MO-0114812	
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
<u>Outfall #001</u>						
Flow	MGD	*		*	once/month	24 hr. estimate
Chemical Oxygen Demand	mg/L	*		*	once/month	grab
Total Suspended Solids (Note 1)	mg/L	*		*	once/month	grab
pH – Units	SU	***		***	once/month	grab
Precipitation	Inches	*			once/month	grab
TPH-(GRO, DRO, ORO)	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 <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>JULY 28, 2013</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity (WET) test Deicing Season (November – April)	% Survival	See Special Conditions			once/year in Jan.	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY THE FIRST REPORT IS DUE BY <u>MAY 28, 2014</u> .						
Whole Effluent Toxicity (WET) test Non-deicing Season (May – October)	% Survival	See Special Conditions			once/permit cycle in Aug.	grab
MONITORING REPORTS SHALL BE SUBMITTED ONCE PER PERMIT CYCLE; THE FIRST REPORT IS DUE BY <u>NOVEMBER 28, 2014</u> .						

* Monitoring requirement only.

** Monitor for deicing components once per month during deicing season (November 1- April 30)

*** 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 – For Outfall #001, TSS will be collected at the top of the sedimentation basin dam. All other Outfall #001 parameters shall be collected at a representative location downstream of the dam.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 4 of 11	
					PERMIT NUMBER MO-0114812	
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
<u>Outfall #002</u>						
Flow	MGD	*		*	once/quarter****	24 hr. estimate
Chemical Oxygen Demand	mg/L	*		*	once/quarter****	grab
Total Suspended Solids	mg/L	*		*	once/quarter****	grab
TPH-(GRO, DRO, ORO)	mg/L	*		*	once/quarter****	grab
pH – Units	SU	***		***	once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2013</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PERMIT NUMBER MO-0114812	
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OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #003</u>						
Flow	MGD	*		*	once/quarter****	24 hr. estimate
Chemical Oxygen Demand	mg/L	*		*	once/quarter****	grab
Total Suspended Solids	mg/L	*		*	once/quarter****	grab
TPH- (GRO, DRO, ORO)	mg/L	*		*	once/quarter****	grab
pH – Units	SU	***		***	once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2013</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

* Monitoring requirement only.

** Monitor for deicing components once per month during deicing season (November 1- April 30)

*** 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.

**** See quarterly sampling below.

Sample discharge at least once for the months of:	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

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 5 of 11	
					PERMIT NUMBER MO-0114812	
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
<u>Outfall #004</u>						
Flow	MGD	*		*	once/quarter****	24 hr. estimate
Chemical Oxygen Demand	mg/L	*		*	once/quarter****	grab
Total Suspended Solids	mg/L	*		*	once/quarter****	grab
TPH-(GRO, DRO, ORO)	mg/L	*		*	once/ quarter****	grab
pH – Units	SU	***		***	once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2013</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. MONITORING REQUIREMENTS					PERMIT NUMBER MO-0114812	
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:						
MONITORING PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>SM1: Downstream Monitoring</u>						
Flow	MGD	*		*	once/quarter****	24 hr. total
Temperature	°C	*		*	once/quarter****	grab
Chemical Oxygen Demand	mg/L	*		*	once/quarter****	grab
Total Suspended Solids	mg/L	*		*	once/quarter****	grab
pH	SU	***		***	once/quarter****	grab
MONITORING PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
#SM1						
Dissolved Oxygen	mg/L	*		*	once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2013</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

* Monitoring requirement only.

** Monitor for deicing components once per month during deicing season (October 1- April 30)

*** 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.

**** See quarterly sampling below.

Sample discharge at least once for the months of:	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

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. Water Quality Standards
 - (a) To the extent required by law, 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.
4. Report as no-discharge when a discharge does not occur during the report period.
5. 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.

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. The permittee shall develop and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must be prepared within 30 days and implemented within 60 days of permit issuance. The SWPPP must be kept on-site and should not be sent to the Department unless specifically requested. 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 the following:

- (a) An assessment of all stormwater 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 Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter storm water. Minimum BMPs are listed in SPECIAL CONDITIONS #8 below.
 - (c) The SWPPP must include a schedule for a monthly site inspection and a brief written report. The inspections must include observation and evaluation of BMP effectiveness, deficiencies, and corrective measures that will be taken. Deficiencies must be corrected within seven days. Inspection reports must be kept on site with the SWPPP. These must be made available to Department personnel upon request.
 - (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. Proof of training shall be submitted on request of the Department.
8. Permittee shall adhere to the following minimum Best Management Practices:
- (a) 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 stormwater from these substances.
 - (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
 - (c) 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 stormwater or provide other prescribed BMP's such as plastic lids and/or portable spill pans to prevent the commingling of stormwater 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.
 - (d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
 - (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property. This could include the use of straw bales, silt fences, or sediment basins, if needed, to comply with effluent limits.
10. The facility shall insure that frozen precipitation removal and stockpiling occurring in deicing fluid collection areas adhere to the following BMPs at a minimum:
- (a) Any stockpiles of frozen precipitation shall be located in areas that provide for drainage during melting to the deicing collection system.
 - (b) Drains for the deicing collection system shall be maintained so as to minimize obstruction by debris which includes frozen precipitation at all times during deicing activities.
11. All spills must be cleaned up within 24 hours or as soon as possible. A record of each spill shall be retained with the SWPPP. The following spills must be reported to the Department at the earliest practicable moment, but no greater than 24 hours after the spill occurs:
- (a) Any spill, of any material, that leaves the property of the facility;
 - (b) Any spill, of any material outside of secondary containment and exposed to precipitation, greater than 25 gallons or equivalent volume of solid material.

C. SPECIAL CONDITIONS (continued)

The Department may require the submittal of a written report detailing measures taken to clean up the spill within 5 days of the spill. The report must include the type of material spilled, volume, date of spill, date clean-up completed, clean-up method, and final disposal method. If the spill occurs 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. These reporting requirements apply whether or not the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the Noncompliance Reporting requirement found in Standard Conditions Part I.

Federal Regulations (CERCLA) requires reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

12. Substances, regulated by federal law under the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERLA), that are transported, stored, or used for maintenance, cleaning or repair, shall be managed according to RCRA and CERLA.

13. 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 examined for hydrocarbon odor and presence of sheen. When the presence of hydrocarbon is indicated, at a minimum of once/quarter, this 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 desires to use other approved testing methods (i.e. EPA 1664), they may do so. If the concentration for TPH exceeds 10 mg/L, the water shall be taken to a wastewater treatment plant (WWTP) for treatment. A summary of secondary containment sampling shall be submitted quarterly in accordance with the following table:

Sample secondary containment at least once for the months of:	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

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 Master General Permit MOG940000 (Wastewater and stormwater associated with fuel spill clean-up) which is hereby incorporated as though fully set forth herein. MOG940000 can be found at <http://www.dnr.mo.gov/env/wpp/permits/issued/G940000.pdf>. 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 o the Kansas City Regional Office by October 28th 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)

14. If any of the sampling results from any of the outfalls show any violation of the permit discharge limitations, written notification shall be made to the Department within five (5) days of notification of analytical results. Notification shall indicate the date(s) of sample collection, the analytical results, and permit number, and shall include a statement concerning the revisions or modifications in management practices that are being implemented to address the violation of the limitations that occurred. After a violation has been reported, a sample of stormwater runoff resulting from the next rainfall greater than 0.1 inches shall be collected at outfall(s) for which the violation occurred. Analytical results of this sample shall be submitted in writing to the Kansas City Regional Office.
15. All sampling data shall be maintained by the permittee for a period of five (5) years and shall be supplied to the Department. A copy of all of the sampling data must be submitted with an application for reissuance of this permit.
16. The permittee shall develop and implement a program for maintenance and repair of the deicing fluid collection system. The permittee shall submit a report annually by July 28th to the Kansas City Regional Office with the Discharge and Monitoring reports detailing the annual volume of wastewater disposed of via the Todd Creek WWTP and/or Blue River WWTP.

17. 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 SWPPP and to assist you in knowing when additional corrective action may be necessary. If a sample exceeds a benchmark concentration you must review your SWPPP and your BMPs to determine what improvements or additional controls are needed to reduce that pollutant in your stormwater 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 exceedance of a benchmark shall result in a review of the SWPPP and BMPs to determine whether any improvement or additional controls are needed to reduce that pollutant in the stormwater discharge.

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

Deicing Season (Nov.-April) Benchmarks Table for Outfall #001

Parameter	Long-Term Average*	Daily Maximum
Chemical Oxygen Demand	90 mg/L	482 mg/L

Non-Deicing Season (May-Oct.) Benchmarks Table for Outfall #001

Parameter	Long-Term Average*	Daily Maximum
Chemical Oxygen Demand	26 mg/L	59 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 and 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 five (5) days.
- b) Within 30 days of exceedance, undertake a review your SWPPP and your BMPs to determine potential cause(s) and. This review shall include a report documenting whether any improvement or additional controls are needed to reduce that pollutant in the stormwater discharge. Failure to undertake and document the review or take the necessary action(s) 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)

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

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT				
OUTFALL	AEC	FREQUENCY	SAMPLE TYPE	MONTH
001	100%	Twice Per Year	Grab	January and August

Dilution Series							
AEC% = 100%	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 Department 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.
- (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 Department'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.

C. SPECIAL CONDITIONS (continued)

- (8) Upon Department 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 Department 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

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF RENEWAL OF
MO-0114812
KANSAS CITY 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 a Major , Minor , Industrial Facility ; Variance .

Part I – Facility Information

Facility Type: INDUSTRIAL
Facility SIC Code(s): 4581

Facility Description:

The Kansas City International Airport (KCI) covers an area of approximately 9,500 acres and is located approximately two (2) miles west of the interchange of Interstate Highways 435 and 29 in Kansas City, Missouri. The physical address of KCI is 601 Brazilia Street, Kansas City, Missouri 65153, and the legal description is the Northwest ¼ of the Northeast ¼, Section 22, in Township 52 North, Range 34 West, in Platte County. KCI receives passenger and commercial airplanes on three (3) runways; two (2) runways are 9,500 feet long and 150 feet wide and one (1) runway is 10,801 feet long and 150 feet wide. KCI operates pursuant to Missouri State Operating Permit (MSOP) number MO-0114812, which authorizes Kansas City (i.e., the Kansas City Aviation Department) to discharge stormwater runoff from the airport through Outfalls 001 to Todd Creek and 002 to a tributary to Todd Creek. During the winter months, the airlines use propylene or ethylene glycol at KCI to deice the airplanes. When glycol mixes with stormwater, it can have detrimental effects on the environment; as bacteria decompose glycol, they deplete the dissolved oxygen available to aquatic life, which can result in negative impact. Each airline is responsible for its own deicing storage, which ranges from small totes to large above ground storage tanks.

Stormwater from the three (3) Passenger Terminals (i.e., A, B, and C) is collected through an underground collection grid, which directs the water to two (2) 1.3 million gallon concrete open-aired Detention Basin Diversion Structures. The collected stormwater is analyzed for Biochemical Oxygen Demand (BOD). Collected stormwater with a BOD of less than 30 mg/L is discharged to the sixty (60) acre Berlin Sedimentation Basin, which is equipped with an aeration system, and eventually discharged through Outfall 001. Outfall 001 is located north of the Passenger Terminals at the confluence of the unnamed tributary to Todd Creek wholly located on KCI's property and fed by Berlin Sedimentation Basin. Stormwater with BOD of 30 mg/L or more is pumped into a gravity sewer system that leads to the Todd Creek Wastewater Treatment Plant (MSOP number MO-0024961, or pumped into contractor tankers and transported to the KC Blue River Wastewater Treatment Facility (MSOP number MO-0024911).

Stormwater from the Cargo Terminal aprons is captured and pumped to a three (3) million gallon aerated tank, where it is tested for BOD. Stormwater with a BOD of less than 30 mg/L is discharged to the sixty (60) acre Berlin Sedimentation Basin. Stormwater with a BOD of 30 mg/L or more is pumped into a gravity sewer system that leads to the Todd Creek Wastewater Treatment Plant (MSOP number MO-0024961), or pumped into contractor tankers and transported to the KC Blue River Wastewater Treatment Facility (MSOP number MO-0024911).

Stormwater runoff generated at the old rental car facility is discharged through Outfall 002, and flows approximately 300 yards before entering Todd Creek. Todd Creek is a Class C stream, and has beneficial uses of livestock and wildlife watering, protection of warm water aquatic life and human health—fish consumption, category "B" whole body contact recreation, and secondary contact recreation. Todd Creek flows in a northerly direction approximately six (6) miles before entering the Platte River. Due to the topography of the

area, any stormwater from KCI that is not collected by the airport's collection system drains into the Berlin Reservoir Sedimentation Basin, and thus discharges through Outfall 001. Stormwater from the rental car facility, hotel, Aviation Department offices and surrounding buildings runs directly to the Berlin Reservoir Sedimentation Basin.

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?

- No.

Original Application Date: 10/22/2007
 Revised Application Date: 11/13/2012
 Expiration Date: 04/17/2008
 Last Inspection: 05/19/2009 In Compliance ; Non-Compliance

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.

Applicable;

COMPLIANCE HISTORY

During the past 94 months, effluent discharged from Outfall 001 failed to comply with permit limitations for Biochemical Oxygen Demand (BOD) during 20 months and for Chemical Oxygen Demand (COD) during 15 months. During the past 94 months, effluent discharged from Outfall 002 failed to comply with permit limitations for BOD during 4 months and COD during 3 months. Pursuant to MSOP number MO-0114812, the BOD monthly average is 30 mg/L and the daily maximum is 45 mg/L, and the COD monthly average is 90 mg/L and the daily maximum is 120 mg/L. During this permit renewal an evaluation of appropriateness of the BOD and COD numeric limitation values previously established was conducted. It appears that the BOD limitation from the previous permit was primarily based on 10 CSR 20-7.015 which is only appropriate for publicly owned treatment works (POTW). Furthermore, the facility has not been able to consistently achieve the limitation from the previous permit. Regarding the COD limitation from the previous permit, it does not appear that any regulation, state or federal, was used to establish the limitation. There is no applicable COD effluent limitation guideline for this facility. An evaluation of performance was conducted by the facility and submitted to the Department which was utilized to establish pollutant benchmarks is in this permit. See Appendix A

Outfall	Parameter	Monitoring Period	DMR (mg/L)
1	BOD	Mar-11	141
1	BOD	Feb-11	120
1	BOD	Apr-10	149
1	BOD	Mar-10	200
1	BOD	Feb-10	153
1	BOD	Jan-10	40.2
1	BOD	Mar-09	34.4
1	BOD	Feb-09	117
1	BOD	Dec-08	62.3
1	BOD	Aug-08	59.9
1	BOD	Apr-08	66.5
1	BOD	Mar-08	107
1	BOD	Feb-08	228
1	BOD	Jan-08	100.55
1	BOD	Mar-07	108
1	BOD	Feb-07	53.6
1	BOD	Jan-06	58.4
1	BOD	Feb-05	129
1	BOD	Mar-04	109
1	BOD	Feb-04	52

Outfall	Parameter	Monitoring Period	DMR (mg/L)
1	COD	Mar-11	226
1	COD	Feb-11	178
1	COD	Apr-10	210
1	COD	Mar-10	347
1	COD	Feb-10	188
1	COD	Feb-09	92
1	COD	Mar-08	224
1	COD	Feb-08	349
1	COD	Jan-08	528
1	COD	Mar-07	141.5
1	COD	Feb-07	275
1	COD	Jan-06	139
1	COD	Feb-05	206
1	COD	Mar-04	208
1	COD	Feb-04	122

Outfall	Parameter	Monitoring Period	DMR (mg/L)
2	BOD	Feb-11	123
2	BOD	Mar-10	97.4
2	BOD	Jan-10	34.9
2	BOD	Feb-04	70.6
2	COD	Feb-11	200
2	COD	Mar-10	700
2	COD	Feb-04	166

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	13.5	Detention, Settling and Aeration	Stormwater	0.13
002	1.3	BMPs	Stormwater	0.20
003	2.015	BMPs	Stormwater	0.55
004	4.495	BMPs	Stormwater	0.0
SM1	NA	NA	NA Stream Monitoring	0.0

Receiving Water Body's Water Quality :

The facility's outfall 001 discharges to Todd Creek while 002, 003 and 004 discharge to an unnamed tributary of Todd Creek in Platte County. Todd Creek was placed on the 2010 303d list due to impairment for dissolved oxygen. In 2012 the Department determined that the statistics used to determine the original 2010 impairment were not significant therefore approval to remove Todd Creek has been made by the Department to EPA.

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:

As per Missouri’s Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall’s Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

All Other Waters [10 CSR 20-7.015(8)]:

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 1st 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:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	EDU**
Unnamed Tributary to Todd Creek	U	NA	General Criteria	102400120710	Central Plains/ Nishnabotna/ Platte
Todd Creek	C	0316	AQL, LWW, SCR, WBC-B		

* - 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), Groundwater (GRW).

** - Ecological Drainage Unit

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Unnamed Tributary to Todd Creek (U)	0.0	0.0	0.0
Todd Creek (C)	0.0	0.0	0.1

MIXING CONSIDERATIONS:

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:

Monitoring Location SM1. (Downstream of Outfall 001 and 002)

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Flow MGD	Once/quarter	24-hr. total	X=353302, Y=4353766
Dissolved Oxygen mg/L	Once/quarter	Grab	
pH Units	Once/quarter	Grab	
Temperature (F)	Once/quarter	Grab	
TSS mg/L	Once/quarter	Grab	

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.

During the data review process of the renewal of this permit, it was noted that the permittee, despite its best efforts, frequently exceeds permit limitations for Chemical Oxygen Demand (COD) in Outfalls #001 and #002. The data also shows that water quality is being protected in spite of exceedances of the existing permit limits. Likewise, the data illustrated no exceedances of the Oil & Grease limits (virtually non-detect) and that new information illustrates the benefits of modified parameters.

In the State of Missouri, Water Quality Standards can be obtained from Missouri Clean Water Commission regulation 10 CSR 20-7.015. 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 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 EPA” and “best professional judgment (BPJ) of the permit writer.”

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, and as a result, control measures for such discharges tend to focus on pollution prevention and BMPs. EPA therefore determined that it is not feasible to calculate numeric, technology-based limitations for many of the discharges covered under the Multi-Sector General Permit (MSGP) and based on authority of 40 CFR 122.44(k), chose to adopt non-numeric effluent limits. According to the fact sheet of MSGP, EPA has long maintained that the narrative limits are most environmentally sound 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 specific control measures that 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. 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 limitations, which also do not require specific control technologies as long as the limits are met. Moreover, the MSGP requires permittee to comply with non-numeric technology-based effluent limit 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 BPJ.

BOD and COD

BOD is being removed from the permit. The site specific data gathered over the last permit cycle shows a correlation between COD and BOD concentrations. EPA’s Technical Development Document for Proposed Effluent Limitation Guidelines and Standards for Airport Deicing Category, July 2009 (EPA 821-R-09-004), section 7 identifies both BOD and COD as pollutants of concern; however, Table 7.2 proposes using COD for regulation purposes and indicates that it is a surrogate for BOD when sampling. EPA’s recommendation for a specific industry, together with the site specific data, provides sufficient justification to remove BOD monitoring and use COD as the monitored parameter.

The source of COD in both outfalls was determined to be from winter (November 1 through April 30) deicing operations. 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) of the Clean Water Act. Coupled with the facts that the permittee, despite its best efforts, has been unable to comply with the existing limits, and water quality is being protected in spite of exceedances of these limits, a change is appropriate and legally justifiable. In accordance with 40 CFR 122.44(k) the numeric effluent limitations for COD in Outfalls #001 and #002 will be replaced with BMPs to control the discharge of this pollutant as numeric effluent limitations are difficult to justify.

TPH and Oil & Grease

Oil & Grease is being eliminated from the permit. TPH and Oil & Grease are intended to reflect pollution from fuels and other petroleum based products. However, Oil & Grease measurements also detect substances that have no relationship to petroleum hydrocarbons, including algal fats and oils which are not reflective of the discharge from this industry classification. In contrast, the TPH analysis is specific to petroleum hydrocarbons and provides insights into the sources of elevated concentrations. Additionally, testing for TPH in lieu of Oil & Grease will allow the permittee to more accurately analyze the discharge, identify potential sources, and take focused corrective action. This approach supports and strengthens the overall BMP approach at this facility and the data to date justify the modification. This modification conforms to the anti-backsliding requirements established in Section 402(o).2.B.i of the Clean Water Act.

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.

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.

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.

Applicable;
A RPA was conducted for Benzene, Ethylbenzene, and Toluene this facility. See appendix B.

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.

Not Applicable;
This permit does not contain a SOC.

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.

Applicable;

A WLA study including model was submitted to the Department by KCI. The WLA study demonstrated that the COD Benchmarks are protective of receiving water quality (see Appendix A).

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 is a designated Major.
- Facility (industrial) that alters its production process throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.

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

Not Applicable; This facility does not discharge to a 303(d) listed stream.

BENCHMARKS:

The site specific benchmarks were calculated using the site’s reported monitoring data from April 11, 2007 through March 8, 2012 and non-parametric statistical techniques. Benchmarks for daily maximum concentrations were calculated as the 99th percentile value of the dataset for each season. “Long-term average” benchmark concentrations were calculated as the 95th percentile median concentration using an empirical statistical technique known as “bootstrapping.” This technique is commonly used in cases where multiple estimates of 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 sample sets drawn from the original dataset. Each new sample 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 new dataset composed of the large number of representative sample sets, and these values are representative estimates of the original dataset. In this case, 10,000 5-year seasonal sample sets were generated for COD at Outfall #001 and the 95th percentile median value was calculated for each season.

The daily maximum benchmark concentrations, for both the deicing and non-deicing seasons were calculated separately as the 99th percentile values of the original dataset. The “long-term average” benchmark concentrations, for both the deicing and non-deicing seasons were calculated using the “bootstrap” technique described above as the 95th percentile of the median concentrations (deicing season and non-deicing season of the historical dataset used for this permit).

When evaluating follow-up activities based on a benchmark exceedance, it should be noted that the 99th percentile values defined by the statistical methodology outlined above can be expected to be exceeded once every 16.5 years on average. Similarly, the 95th percentile median values defined by the “bootstrap” technique can be expected to be exceeded once every 3.5 years on average. In both cases, such exceedances may, but do not necessarily, indicate unacceptable operation of the existing collection system

Part V – Effluent Limits Determination

Outfall #001 –Berlin Reservoir Sedimentation Basin

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
Flow	GPD	*		*	NO	*/*
BOD5	MG/L				***	45/30
Chemical Oxygen Demand	MG/L	*		*	YES	120/90
Total Suspended Solids	MG/L	*		*	YES	100/50
Total Petroleum Hydrocarbons (TPH) (GRO, DRO, ORO)	µG/L	*		*	YES	15/10
Oil and Grease	MG/L				***	15/10
pH	SU	6.5-9.0		6.5-9.0	YES	6.0-9.0
Precipitation	INCHES	*			NO	*
Total BETX	MG/L				***	0.75/0.75
Methyl Tertiary Butyl ether (MTBE)	MG/L				***	*/*
Total Glycols	MG/L				***	*/*
Ethylene Glycol	MG/L	*		*	NO	*/*
Acetate	MG/L	*		*	YES	**
Whole Effluent Toxicity (WET) Test	% Survival	Please see WET Test in the Derivation and Discussion Section below.				

- * Monitoring requirement only.
- ** Parameter not previously established in previous state operating permit.
- *** Parameter previously established in the previous state operating permit but removed during this renewal

OUTFALL #001 – 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.
- **Biochemical Oxygen Demand (BOD₅).** BOD₅ limitations have been removed from this permit. It appears that the BOD limitation from the previous permit was primarily based on 10 CSR 20-7.015 which is only appropriate for publicly owned treatment works (POTW). Furthermore, the facility has not been able to consistently achieve the limitation from the previous permit. It is the best professional judgment of the permit writer that COD is a sufficient parameter to evaluate oxygen demand.
- **Chemical Oxygen Demand (COD).** A monitoring only requirement has replaced numeric COD limitations from the previous permit. The COD limitation from the previous permit seems to have been established arbitrarily and was not based on any state or federal regulation. Recent effluent limit guidelines promulgated by EPA for airports required new airports to meet a daily maximum limitation of 271 mg/L and a weekly average limitation of 154 mg/L. This limitation is based on new technology therefore is not applicable for this existing facility. An evaluation of performance was conducted by the facility and submitted to the Department which has been utilized to establish pollutant benchmarks is in this permit. See Appendix A
- **Total Suspended Solids (TSS).** Outfall 001 discharges via the Berlin Sedimentation Basin Dam. The previous permit established limitations for TSS at outfall 001. During the drafting of this permit this limitation was evaluated and determined to not be applicable for this location due to the having 60 acres of available settling. A best professional judgment monitoring only requirement has been established at this time.
- **Total Petroleum Hydrocarbons (TPH) (GRO, DRO, ORO).** TPH monitoring has been established in place of a numeric limitation as established in the previous permit. The previous limitation was established as a surrogate for pollutants associated with petroleum. There is no TPH water quality standard established in 10CSR 20-7.031 and since the facility has an extensive spill prevention and action plan, monitoring only has been deemed protective. Additionally, secondary containment on site is subject to special condition # 11.
- **Oil and Grease.** This parameter has been removed from the permit. This parameter is being monitored by TPH.
- **pH.** Effluent limitation range is from 6.5 to 9.0 Standard pH Units (SU) 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.
- **Precipitation.** Monitoring requirement only. Precipitation monitoring at a local weather station is required based on best professional judgment due to stormwater being the primary conveyance of pollutants address in this permit.
- **Total BTEX.** This parameter is the summation of Benzene ,toluene, Ethyl-Benzene and Xylene which has been assessed and determined to no longer necessary.
- **Methyl Tertiary Butyl Ether.** Methyl Tertiary Butyl Ether (MTBE) has been assessed and determined to no longer applicable.
- **Total Glycol.** Total Glycol monitor has been removed and replaced with monitoring for Ethylene Glycol and Propylene Glycol monitoring.
- **Ethylene Glycol.** Monitoring for ethylene glycol has been established to evaluate the volume being discharged at outfall 001. Ethylene glycol is associated with deicing activities.
- **Propylene Glycol.** Monitoring for propylene glycol has been established to evaluate the volume being discharged at outfall 001. Propylene Glycol is associated with deicing activities.
- **Acetate.** Monitoring for Acetate has been established to evaluate the volume being discharged at outfall 001. Acetate is associated with deicing activities.

- **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/YEAR DURING DEICING SEASON AND ONCE/PERMIT CYCLE IN AUGUST:**
 - Facility is subject to production processes alterations throughout the year.
 - Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.

Outfall #002 –

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
Flow	GPD	*		*	NO	*/*
BOD5	MG/L				***	45/30
Chemical Oxygen Demand	MG/L	*		*	YES	120/90
Total Suspended Solids	MG/L	*		*	YES	100/50
Total Petroleum Hydrocarbons (GRO, DRO, ORO)	µG/L	*		*	YES	15/10
Oil and Grease	MG/L				***	15/10
pH	SU	6.5-9.0		6.5-9.0	YES	6.0-9.0
Total BETX	MG/L				***	0.75/0.75
Methyl Tertiary Butyl ether (MTBE)	MG/L				***	*/*
Total Glycols	MG/L				***	*/*
Ethylene Glycol	MG/L				***	*/*
Propylene Glycol	MG/L				***	*/*

- * Monitoring requirement only.
- ** Parameter not previously established in previous state operating permit.
- *** Parameter previously established in the previous state operating permit but removed during this renewal

OUTFALL #002 – 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.
- **Biochemical Oxygen Demand (BOD₅), Oil and Grease, Total BETX, Benzene, Methyl Tertiary Butyl Ether, Total Glycol, Ethylene Glycol, Propylene Glycol.** Biochemical Oxygen Demand (BOD₅), Oil and Grease, Total BETX, Benzene, Methyl Tertiary Butyl Ether, Total Glycol, Ethylene Glycol, and Propylene Glycol have been removed from Outfall 002 due to no refueling or deicing activities taking place in the drainage of Outfall 002.
- **Chemical Oxygen Demand (COD).** A monitoring requirement has been established to evaluate COD concentration being discharged at Outfall 002.
- **Total Suspended Solids (TSS).** A monitoring requirement has been established to evaluate TSS concentration being discharged at Outfall 002.
- **Total Petroleum Hydrocarbons (TPH) (GRO, DRO, ORO)** TPH monitoring has been established in place of a numeric limitation as established in the previous permit. The previous limitation was established as a surrogate for pollutants associated with petroleum. There is no TPH water quality standard established in 10CSR 20-7.031 and since the facility has an extensive spill prevention and action plan, monitoring only has been deemed protective. Additionally, secondary containment on site is subject to special condition # 11. Furthermore, oil and grease has been removed from the permit for this outfall in place of the TPH monitoring.

- **pH.** Effluent limitation range is from 6.5 to 9.0 Standard pH Units (SU) 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.

Outfall #003–

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED
Flow	GPD	*		*	NEW
Total Suspended Solids	MG/L	*		*	NEW
Total Petroleum Hydrocarbons (GRO, DRO, ORO)	µG/L	*		*	NEW
Chemical Oxygen Demand	MG/L	*		*	NEW
pH	SU	6.5-9.0		6.5-9.0	NEW

* - Monitoring requirement only.

OUTFALL #003– 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.
- **Total Suspended Solids (TSS).** A monitoring requirement has been established to evaluate TSS concentration being discharged at Outfall 003.
- **Total Petroleum Hydrocarbons (TPH) (GRO, DRO, ORO)** TPH monitoring has been established in place of a numeric limitation as established in the previous permit. The previous limitation was established as a surrogate for pollutants associated with petroleum. There is no TPH water quality standard established in 10CSR 20-7.031 and since the facility has an extensive spill prevention and action plan, monitoring only has been deemed protective. Additionally, secondary containment on site is subject to special condition # 11. Furthermore, oil and grease has been removed from the permit for this outfall in place of the TPH monitoring.
- **Chemical Oxygen Demand (COD).** A monitoring requirement has been established to evaluate COD concentration being discharged at Outfall 003.
- **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.

Outfalls #004 –

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED
Flow	GPD	*		*	NEW
Total Suspended Solids	MG/L	*		*	NEW
Chemical Oxygen Demand	MG/L	*		*	NEW
Total Petroleum Hydrocarbons (GRO, DRO, ORO)	µG/L	*		*	NEW
pH	SU	6.5-9.0		6.5-9.0	NEW

* - Monitoring requirement only.

OUTFALL #004 – 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.
- **Total Suspended Solids (TSS).** A monitoring requirement has been established to evaluate TSS concentration being discharged at Outfall 004.
- **Chemical Oxygen Demand.** A monitoring requirement has been established to evaluate COD concentration being discharged at Outfall 004. The expanded effluent testing with the application indicated COD concentration of 86 mg/L.
- **Total Petroleum Hydrocarbons (TPH) (GRO, DRO, ORO)** TPH monitoring has been established in place of a numeric limitation as established in the previous permit. The previous limitation was established as a surrogate for pollutants associated with petroleum. There is no TPH water quality standard established in 10CSR 20-7.031 and since the facility has an extensive spill prevention and action plan, monitoring only has been deemed protective. Additionally, secondary containment on site is subject to special condition # 11. Furthermore, oil and grease has been removed from the permit for this outfall in place of the TPH monitoring.
- **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.

Monitoring Location #SM1–

Stream monitoring established in the below Stream Monitoring Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

STREAM MONITORING TABLE:

PARAMETER	UNIT	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED
Flow	GPD	*		*	NEW
Total Suspended Solids	MG/L	*		*	NEW
Chemical Oxygen Demand	MG/L	*		*	NEW
pH	SU	6.5-9.0		6.5-9.0	NEW
Dissolved Oxygen (DO)	MG/L	*		*	NEW

* Monitoring requirement only.

** For DO the Daily Maximum is a Daily Minimum and the Monthly Average is a Monthly Average Minimum.

MONITORING LOCATION #SM1 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow** A monitoring requirement to evaluate in stream flow conditions.
- **Total Suspended Solids (TSS).** A monitoring requirement has been established to evaluate in stream TSS concentration. The permittee has noted in-channel sources of suspended sediments. This fact should be considered when evaluating TSS results at this location.
- **Chemical Oxygen Demand (COD).** A monitoring requirement has been established to evaluate in stream COD concentration.
- **pH.** Monitoring requirement to evaluate in stream pH downstream of outfall 001 and 002
- **Dissolved Oxygen (DO)** Monitoring requirement to evaluate in stream concentrations of dissolved oxygen downstream of Outfalls 001 and 002.

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.

PERMIT SYNCHRONIZATION:

The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future.

This permit will expire on **March 31, 2015** in order to meet the permit synchronization goals.

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 03/15/2013 to 04/15/2016. Responses to the Public Notice comments from KCIA are as follows:

Comment No. 1: Standard conditions should be updated to reflect the most recent version of the document.

- Response: The newly revised standard conditions are not final at the time of issuance, no changes were made.

Comment No. 2: C.3.(b) pertaining to general criteria should be deleted in its entirety.

- Response: General criteria are applicable to all waters of the state. No discharge may cause an excursion of these criteria. The statement of general criteria is standard permit language that is included to ensure the permittee is aware of their responsibility to protect the narrative water quality standards. This condition was not changed.

Comment No. 3: In-channel sources of suspended sediments may influence TSS monitoring results at outfalls 002,003 and 004 as well as SM1. The permittee encourages the Department to consider these sources in their evaluation of the resulting monitoring data.

- Response: The Department encourages the permittee to sample stormwater discharges prior to its mixing with water that is not representative of the discharge. The Department will consider the influence of instream erosion on TSS results at SM1. The following language was added to the fact sheet concerning SM1 “The permittee has noted in-channel sources of suspended sediments. This fact should be considered when evaluating TSS results at this location.”

DATE OF FACT SHEET: APRIL 24, 2013

COMPLETED BY:

AMANDA SAPPINGTON, ENVIRONMENTAL SPECIALIST IV
NPDES PERMITS UNIT
OPERATING PERMITS SECTION
WATER PROTECTION PROGRAM
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OUTFALL LOCATION



TECHNICAL MEMORANDUM

CH2MHILL

Evaluation of the Basis for Revised NPDES Limits for Kansas City International Airport

PREPARED FOR: Sabrina Largen, Bob Jones/KCIA
PREPARED BY: Dean Mericas/ AUS, Bill McMillin/NJO, Klaus Albertin/RDU
DATE: July 31, 2012

Background

Stormwater discharges at Kansas City International Airport (KCIA) are authorized by an NPDES permit (MO-0114812) issued by the Missouri Department of Natural Resources (DNR). The current permit expired in April 2008. KCIA submitted an application for renewal on October 17, 2007, and the permit was administratively extended until a new permit can be issued. KCIA submitted an updated application for renewal of the permit in January 2012. In that application, KCIA documented short comings in the basis for the existing numerical limits for biochemical oxygen demand (BOD) and chemical oxygen demand (COD), and proposed to conduct analyses establishing the basis for alternative numerical benchmark concentrations following the approach used by DNR for the Lambert – St. Louis International Airport's (Lambert's) 2012 NPDES Permit. During a meeting in Jefferson City, MO on April 14th, 2012, DNR permitting staff indicated that they would consider replacing the existing limits with benchmark concentrations once they saw the results of the analyses. This technical memorandum presents the results of the analyses.

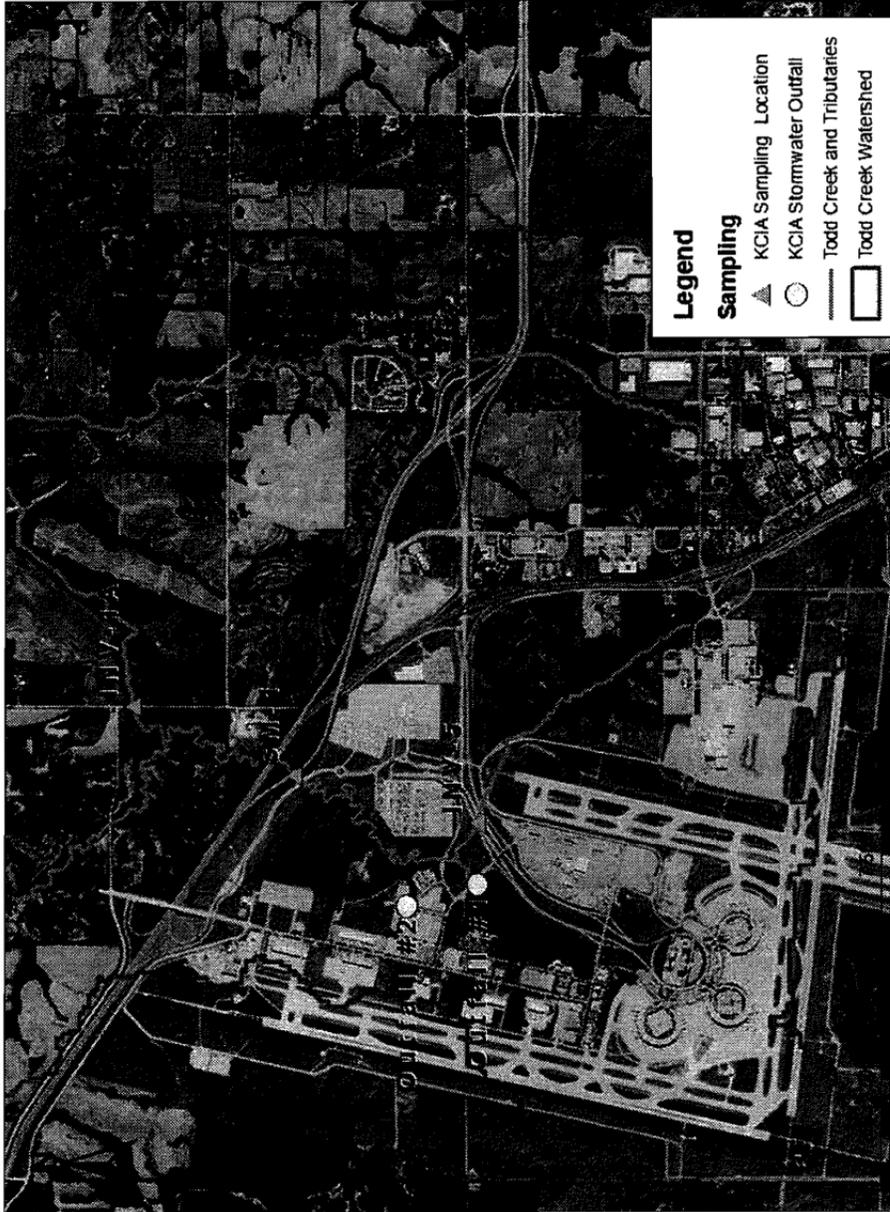
The use of benchmark concentrations as the basis for NPDES permit compliance has been described by DNR staff as "BMP requirements with a water quality back-stop." The concept can be summarized as two components:

1. Water quality back-stop: The existing stormwater and deicing controls are operating at a level of performance that is not threatening maintenance of water quality (i.e., dissolved oxygen, or DO) standards in the receiving waters.
2. BMP Requirements: Benchmarks based on the statistical performance of the system can be used to demonstrate continued proper maintenance and operation of the system.

Methods

This evaluation consisted of two phases. The first phase was a screening-level assessment of potential water quality impacts in Todd Creek associated with stormwater discharges using a Water Quality-Based Effluent Limits (WQBEL) approach. Historical data from Outfall 001 at KCIA (Figure 1) were compared to the WQBEL to determine whether the performance of the existing controls would be protective of water quality. The second phase was a statistical assessment of water quality data collected at Outfall 001 to support the development of water quality benchmarks.

FIGURE 1
KCIA Stormwater Discharge and Sampling Locations



WQBEL Analysis

The focus of the WQBEL analysis is Todd Creek, a small stream in Missouri Hydrologic Unit 10240012, northwest of Kansas City, MO. The creek is shown on Exhibit 1 beginning onsite near the southeastern boundary of the KCIA property and leaves the property along the northeast boundary before traveling under NW Roanridge Rd/I-29 (the INV-1 location shown on the exhibit). Drainage from the terminal areas flows to Parrot's Beak and Berlin Reservoirs. Releases from Berlin Reservoir are passively controlled and meet the flow from an unnamed tributary at a point just above Canberra Street and assessment point SM-1. From its headwaters at the airport, the creek travels 11.8 miles to its confluence with the Little Platte River.

During the deicing season a portion of the stormwater from apron areas where deicing is conducted is either diverted to the Todd Creek Wastewater Treatment Plant (WWTP) or trucked to the Blue River WWTP, both operated by the Kansas City Water Services Department. Runoff from areas that are not diverted is discharged to the Berlin Reservoir and is subsequently discharged over the dam retaining the reservoir, which is designated as Outfall 001 (as shown in Figure 1). Drainage to Outfall 2 does not include deicing areas and does not have deicer-related water quality effluent concerns. A screening-level water quality analysis was conducted to determine whether the benchmarks assigned to Outfall 001 would be protective of water quality in Todd Creek. A technical memorandum describing the analysis is provided in Attachment 1.

The screening-level water quality analysis assessed impacts consistent with the stream's designated uses and applicable water quality standards. The analysis framework, based on the Streeter-Phelps equation was applied to a hypothetical deicing season stormwater discharge with the primary objective of assessing the potential impact of deicer discharges on DO in Todd Creek. Calculations were performed to identify maximum BOD concentration thresholds in KCIA stormwater discharges that correspond to downstream-compliant DO concentrations (5.0 mg/L) under different combinations of streamflow and temperature.

Data and information to develop the Streeter-Phelps analysis were compiled from KCIA, city, state, and federal sources. NPDES permit, conveyance, storage, treatment, and discharge information were compiled to characterize the discharge from Outfall 001 and potential pollutant loading characteristics. Data from existing hydraulic models were used to describe the stream channel and hydraulics. Meteorological data was compiled to review typical wintertime weather conditions. Precipitation-discharge relationships and water quality data were compiled to characterize receiving water responses during low-flow conditions typical of deicing season stormwater discharges at Outfall 001.

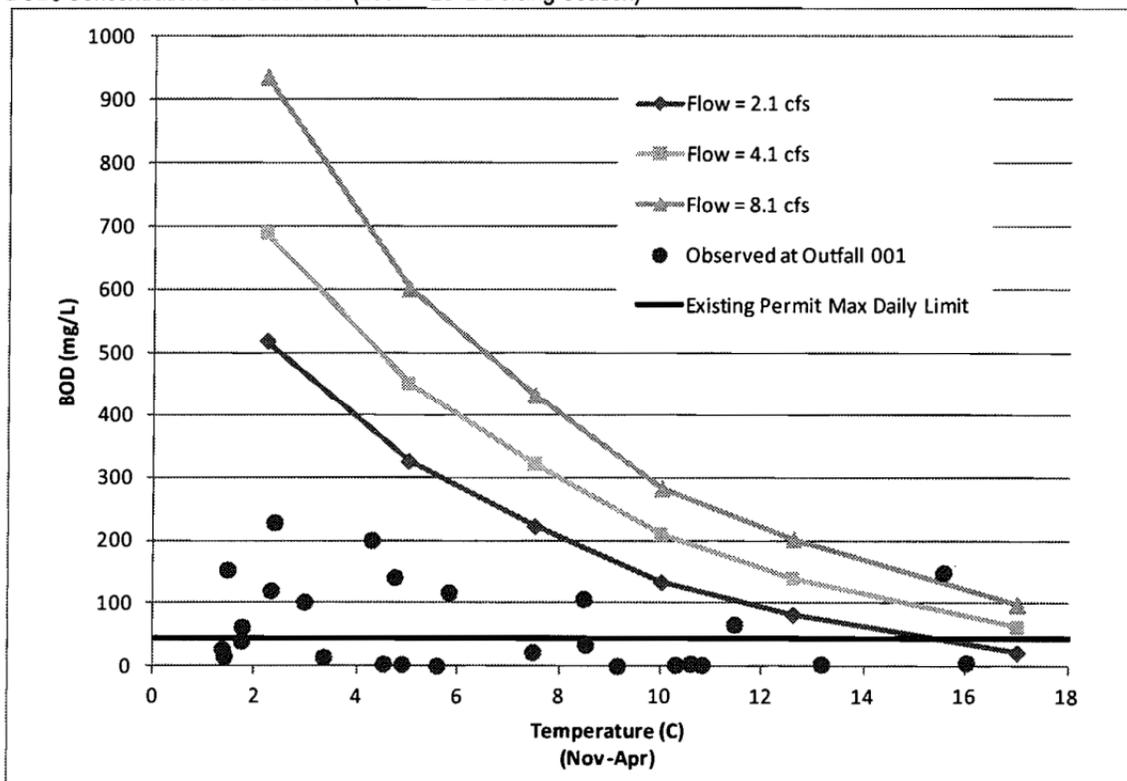
The conditions described above were applied in the definition and analysis of a representative baseline scenario. Sensitivity analyses were conducted to explore the impacts of varying scenario parameters such as flow in the receiving water and water temperature on DO in Todd Creek and on the maximum BOD₅ concentrations in KCIA discharges that do not result in DO less than 5.0 mg/L. The analysis indicated that the response was most sensitive to BOD₅ load, flow in the receiving water, and water temperature.

EVALUATION OF THE BASIS FOR REVISED NPDES LIMITS FOR KANSAS CITY INTERNATIONAL AIRPORT

Four low-flow scenarios were then evaluated for six temperature condition to determine the maximum allowable BOD₅. Allowable BOD₅ concentrations for the temperature and flow scenarios ranged nearly 900 mg/L. Warm, low-flow conditions, characteristics of the non-deicing season, result in the greatest impact on water quality and constrain allowable BOD₅ to 82 mg/L as the worst-case scenario. For monthly wintertime observations between 2006 and 2012, BOD₅ concentrations at Outfall 001 exceeded 82 mg/L eleven times. With temperatures typical of December, discharge BOD₅ concentrations could be as high as 520 mg/L without calculating noncompliance at the lowest Outfall flow simulated (2.1 cfs).

The BOD-temperature relationship was compared to historical data to determine the likelihood of effluent concentrations occurring above a given concentration. Figure 2 presents the comparison of allowable BOD₅ concentrations for three low-flow scenarios at winter temperatures and BOD₅ observations made by KCIA at Outfall 001 between 2006 and 2012. The exhibit shows that 25 out of 26 observations (96 percent) yielded BOD₅ concentrations lower than that which the analysis indicates might be associated with minimum downstream DO less than 5.0 mg/L under conservative conditions. The BOD₅ of the single observation that was higher than the calculated allowable BOD₅ was 150 mg/L. All other observations above 150 mg/L BOD₅ were associated with instream temperatures of less than 5°C and were well below the calculated allowable BOD₅ at any flow scenario.

FIGURE 2
 BOD₅ Concentrations at Outfall 001 (2007 – 2012 Deicing Season)



Statistical Analysis of Past Discharge Characteristics at Outfall 001

Water quality data, including BOD₅ and chemical oxygen demand (COD) concentrations, are collected approximately monthly at Outfall 001. Two seasons were defined for the purposes of this assessment: the deicing season comprising November through April; and the non-deicing season extending from May through October. This assessment focused on the last five years of data to provide the most accurate representation of current conditions of deicer usage, treatment, and capture. Twenty-seven (27) BOD₅ and COD samples for each season were collected during the 5-year evaluation period.

Two different benchmark estimates were developed for each parameter/season combination: one corresponding to the daily maximum value and the other to the long-term "average" value. The daily maximum benchmark is defined as either the 95th or 99th percentile value of the observed data.

Consistent with the Lambert permit, the 5-year median was selected as the appropriate statistic to represent the long-term "average" benchmark. Due to the limited size of the datasets and the fact that the distribution of the data is unknown, traditional statistical evaluation methods use to determine the median 95th or 99th percentile value were deemed inappropriate for this assessment. Instead, an empirical technique known as "bootstrapping" was applied to the water quality data (Efron 1993; Davison and Hinkley, 1997). This technique is commonly used in cases where the distribution of the dataset is unknown, and is particularly useful for small datasets. A more detailed description of the process is provided in Attachment 1.

Statistically, it's expected that benchmarks based on the 95th percentile values will be exceeded about every 3.3 years, while benchmarks based on the 99th percentile values are expected to be exceeded about every 16.6 years.

US EPA's recent Effluent Limitation Guidelines and New Source Performance Standards for the Airport Deicing Category (Federal Register / Vol. 77, No. 95 / Wednesday, May 16, 2012) contains information that suggests that the 99th percentile is appropriate for establishing permit limits. Specifically, there is a discussion of the statistical basis for new source performance standards in the rule that contains the following statement:

To allow for possibly higher daily discharges, EPA has established the daily maximum limitation at a relatively high level (i.e., the 99th percentile). EPA has consistently used the 99th percentile as the basis of the daily maximum limitation in establishing limitations for numerous industries for many years; numerous courts have upheld EPA's approach.

Although both BOD and COD benchmark concentrations were calculated, it is proposed that the COD concentration percentile values be used as the measure for compliance due to COD's simpler, more accurate analysis method. The results of the analyses are summarized in Table 1.

The deicing season values shown in Table 1 are all significantly higher than the current limits in KCIA's permit for BOD₅ (45 mg/L maximum and 30 mg/L average) and COD (120 mg/L maximum and 90 mg/L average).

EVALUATION OF THE BASIS FOR REVISED NPDES LIMITS FOR KANSAS CITY INTERNATIONAL AIRPORT

TABLE 1
 Estimated Water Quality Benchmarks

	Daily Max (mg/L) (99 th percentile)	Long-Term "Average" (mg/L) (95 th percentile median)
BOD		
Deicing Season (Nov – Apr)	220.7	66.5
Non-Deicing Season (May – Oct)	30.0	4.5
COD		
Deicing Season (Nov – Apr)	481.5	90.0
Non-Deicing Season (May – Oct)	58.6	25.7

Conclusions

The analysis indicates that typical BOD concentrations observed at Outfall 001 should not result in DO concentrations in Todd Creek falling below water quality standards under the assumed baseline scenario conditions. Not surprisingly, warm temperatures and low flow conditions are calculated to significantly constrain allowable BOD concentrations, with the worst, very conservative simulated case (temperature = 12.6°C, KCIA discharge = 2.0 cfs) corresponding to a maximum allowable BOD₅ concentration of 82 mg/L. These calculated thresholds are significantly higher than the existing permit limits

Comparing observed BOD concentrations to the calculated thresholds indicate that 96 percent of deicing season observations between 2006 and 2012 were below the calculated thresholds. In addition, historical data show that while the 99th percentile benchmarks are likely to occur only during colder temperatures when the assimilative capacity of the stream is high.

The COD concentration values shown below are recommended as the basis for benchmark values in the new KCIA permit:

	Daily Max (99 th percentile)	Long-Term "Average" (95 th percentile median)
Deicing Season (Nov – Apr)	481.5 mg/L	90 mg/L
Non-Deicing Season (May – Oct)	58.6 mg/L	25.7 mg/L

References

Carollo Engineers, 2005. Todd Creek Watershed Master Plan Study. Prepared for and provided by Stormwater Utility Division, Water Services Department, City of Kansas City, Missouri.

APPENDIX B – RPA RESULTS:

AN RPA WAS CONDUCTED ON THE FOLLOWING POLLUTANTS. PLEASE NOTE THAT ETHYLBENZENE AND TOLUENE WERE EVALUATED USING THE BETX DATA FROM THE PREVIOUS PERMIT CYCLE AS A WORST CASE SCENARIO AND NO RP EXISTED.

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	CV***	RP Yes/No
Benzene	5.0	3.5	5	3.5	71	0.4619	No
Ethylbenzene	320	14.2	320	14.2	71	0.75	No
Toluene	1000	14.2	1000	14.2	71	0.75	No

N/A – Not Applicable

* - Units are (µg/L) unless otherwise noted.

** - If the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent.

*** - Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.

RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).

n – Is the number of samples.

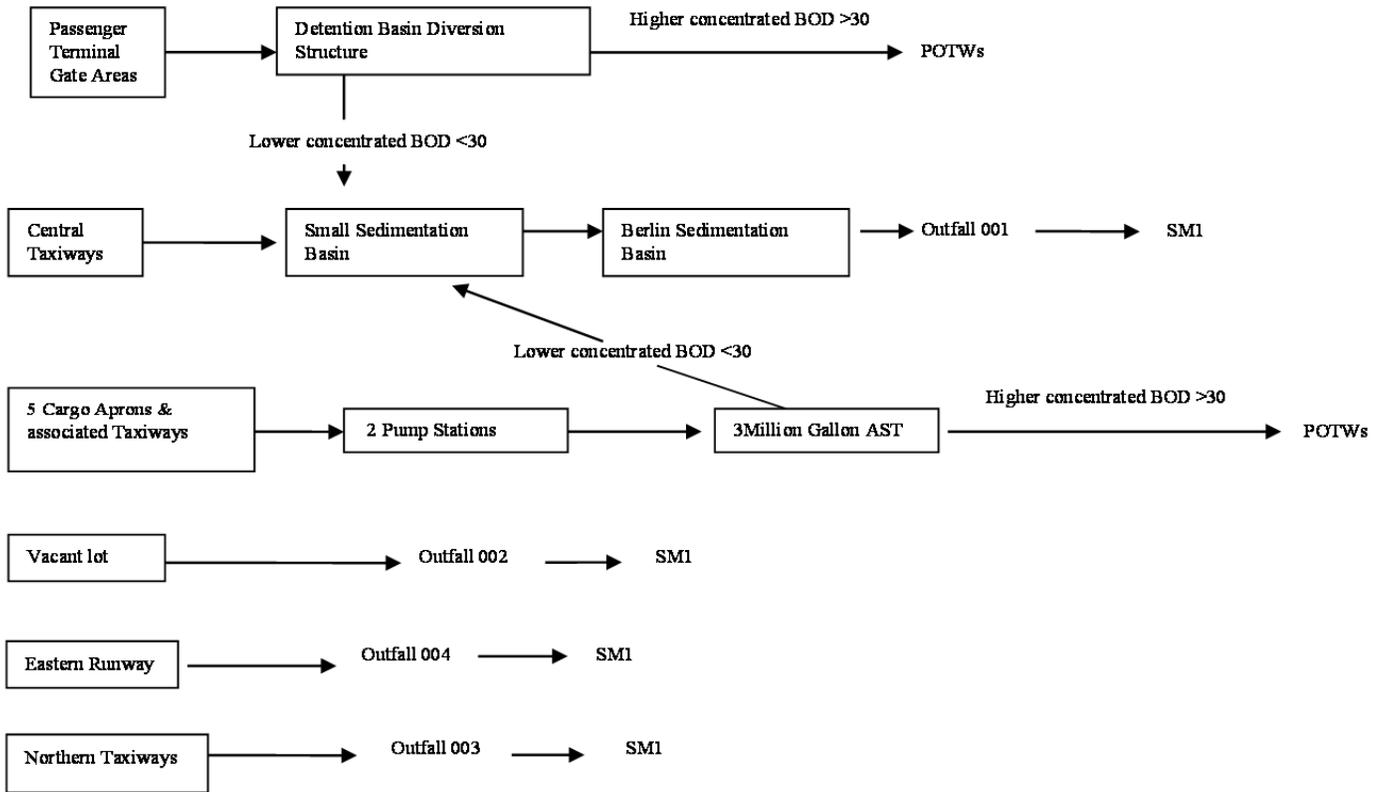
MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.

RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request.

APPENDIX C – KCI AIRPORT DEICING STORMWATER SCHEMATIC FLOW DIAGRAM

KCI AIRPORT DEICING STORMWATER SCHEMATIC FLOW DIAGRAM



NOTE CHANGES: A stormwater collection system was built for the cargo aprons with a 3million gallon AST. The old rental car facilities were demolished ,currently it is a vacant lot (Outfall 002).

Note: INV 1 = Monitoring Location SM1



Aviation Department

Kansas City International Airport
601 Brasilia Avenue
Kansas City, Missouri 64153

P.O. Box 20047
Kansas City, Missouri 64195

	(816)	FAX
Director	243-3100	243-3170
Deputy Director	243-3180	243-3113
Accounting	243-3120	243-3172
Commercial Development	243-3020	243-3070
Engineering	243-3030	243-3071
Human Resources	243-3010	243-3072
Information Services	243-3140	243-3172
Marketing	243-3160	243-3171

October 18, 2012

Chris Weiberg
Environmental Specialist
MDNR Water Pollution Control Program
PO Box 176
Jefferson City, MO 64102-0176

RECEIVED

OCT 22 2012

WATER PROTECTION PROGRAM

RE: Permit No. MO-0114812 , Permit addendum

Dear Mr. Weiberg,

Consistent and with our understanding of the August 23rd meeting and with Chris Weiberg's August 28th email, included with this letter are:

- Addendum to the application form A & C for the two new outfalls
- Anti-backsliding Language for the Fact Sheet
- Benchmarks language for the Fact Sheet

As is usual with most MDNR permitting processes, we look forward to seeing the pre-public notice version of the permit in the hopes that we may help ensure that the public notice process is as clear and as straightforward as possible.

Please feel free to contact me at (816) 243-3110 or sabrina.largen@kcmo.org if you require clarification or addition information.

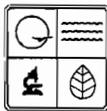
Respectfully,

Sabrina Largen

Cc: Mark VanLoh, A.A.E., Director of Aviation
Matt Gigliotti, Environmental Attorney, Law Department
Dean Mericas, Aviation Environmental Services Practice Director, CH2M HILL

Encl: Application Form A & C Addendum
Anti-backsliding
Benchmarking

OCT 22 2012



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
FORM A – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT
 UNDER MISSOURI CLEAN WATER LAW

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED 10/22/12	FEE SUBMITTED \$ 83

Note ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for:

- An operating permit and antidegradation review public notice
- A construction permit following an appropriate operating permit and antidegradation review public notice
- A construction permit and concurrent operating permit and antidegradation review public notice
- A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)
- An operating permit for a new or unpermitted facility Construction Permit # _____
- An operating permit renewal: permit # MO- 0114812 Expiration Date 4/17/2008
- An operating permit modification: permit # MO- _____ Reason: _____

1.1 Is the appropriate fee included with the application? (See instructions for appropriate fee) YES NO

2. FACILITY

NAME KANSAS CITY INTERNATIONAL AIRPORT		TELEPHONE WITH AREA CODE (816) 243-3110	
		FAX (816) 243-3170	
ADDRESS (PHYSICAL) 601 BRASILIA AVENUE	CITY KANSAS CITY	STATE MO	ZIP CODE 64153

3. OWNER

NAME CITY OF KANSAS CITY		E-MAIL ADDRESS sabrina.largen@kcmo.org	TELEPHONE WITH AREA CODE (816) 243-3110	
			FAX (816) 243-3170	
ADDRESS (MAILING) 414 EAST 12TH STREET	CITY KANSAS CITY	STATE MO	ZIP CODE 64106	

3.1 Request review of draft permit prior to public notice? YES NO

4. CONTINUING AUTHORITY

NAME KANSAS CITY INTERNATIONAL AIRPORT		TELEPHONE WITH AREA CODE (816) 243-3110	
		FAX (816) 243-3170	
ADDRESS (MAILING) 601 BRASILIA AVENUE	CITY KANSAS CITY	STATE MO	ZIP CODE 64153

5. OPERATOR

NAME SAME AS ABOVE	CERTIFICATE NUMBER NA	TELEPHONE WITH AREA CODE	
		FAX	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

6. FACILITY CONTACT

NAME SABRINA LARGEN	TITLE KCAD ENVIRONMENTAL MANAGER	TELEPHONE WITH AREA CODE (816) 243-3110	
		FAX (816) 243-3170	

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 NW 1/4 NE 1/4 Sec 22 T 52N R 34W Platte County
 UTM Coordinates Easting (X): 2,729,416.97 Northing (Y): 1,144,777.62
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 NW 1/4 NE 1/4 Sec 22 T 52N R 34W Platte County
 UTM Coordinates Easting (X): 2,728,955.87 Northing (Y): 1,146,263.79

003 SW 1/4 NW 1/4 Sec 15 T 52N R 34W Platte County
 UTM Coordinates Easting (X): 2,728,176.46 E Northing (Y): 1,148,100.26

004 NW 1/4 NE 1/4 Sec 22 T 52N R 34W Platte County
 UTM Coordinates Easting (X): 2,730,748.21 E Northing (Y): 1,144,790.23 N

7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.

001 – SIC 4581 and NAICS _____ 002 – SIC _____ and NAICS _____
 003 – SIC _____ and NAICS _____ 004 – SIC _____ and NAICS _____

OCT 22 2012

WATER PROTECTION PROGRAM



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
**FORM C – APPLICATION FOR DISCHARGE PERMIT –
MANUFACTURING, COMMERCIAL, MINING,
SILVICULTURE OPERATIONS, PROCESS & STORM WATER**

FOR AGENCY USE ONLY

CHECK NO.

DATE RECEIVED

FEE SUBMITTED

TE: DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTIONS

1.00 NAME OF FACILITY

Kansas City International Airport

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER

MO 0114812

1.20 THIS IS A NEW FACILITY AND WAS CONSTRUCTED UNDER MISSOURI CONSTRUCTION PERMIT NUMBER (COMPLETE ONLY IF THIS FACILITY DOES NOT HAVE AN OPERATING PERMIT).

2.00 LIST THE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES APPLICABLE TO YOUR FACILITY (FOUR DIGIT CODE)

A. FIRST 4581

B. SECOND

C. THIRD

D. FOURTH

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

outfall #2 NW 1/4 NE 1/4 SEC 22 T 52N R 34W Platte COUNTY
outfall #3 SW 1/4 NW 1/4 SEC 15 T 52N R 34W Platte Co.
outfall #4 NW 1/4 NE 1/4 SEC 22 T 52N R 34W Platte Co

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

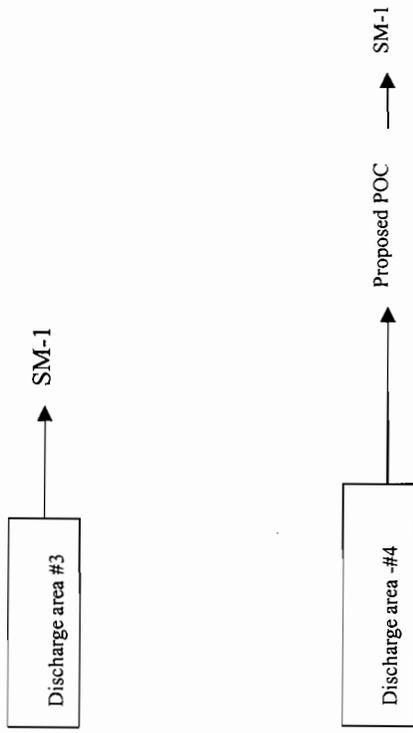
OUTFALL NUMBER (LIST)
Outfall 001
Outfall 002
Outfall 3
Outfall 4

RECEIVING WATER
Tributary to Todd Creek to Platte River Basin
Tributary to Todd Creek to Platte River Basin
Tributary to Todd Creek to Platte River Basin
" " " " " " "

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

International Airport, Rental Cars, Aircraft de-icing

KCI AIRPORT DEICING STORMWATER SCHEMATIC FLOW DIAGRAM: Discharge Areas #3 and #4



PLEASE PRINT OR TYPE. You may report some or all of this information on separate sheet instead of completing these pages.
 (Use the same format)
 SEE INSTRUCTIONS

FORM C
 TABLE 1 FOR 3.00 ITEM A AND B

OUTFALL NO.
 #3 no samples

INTAKE AND EFFLUENT CHARACTERISTICS

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT				3. UNITS (specify if blank)				4. INTAKE (optional)		B. NO. OF ANALYSES	
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION		(2) MASS
A. Biochemical Oxygen Demand (BOD)												
B. Chemical Oxygen Demand (COD)												
C. Total organic Carbon (TOC)												
D. Total Suspended Solids (TSS)												
E. Ammonia (as N)												
F. Flow	VALUE		VALUE		VALUE					VALUE		
G. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
H. Temperature (summer)	VALUE		VALUE		VALUE			°C		VALUE		
I. pH	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM				STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results for at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS				5. INTAKE (optional)		B. NO. OF ANALYSES	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION		(2) MASS
A. Bromide (24959-67-9)		X												
B. Chlorine Total Residual		X												
C. Color		X												
D. Fecal Coliform		X												
E. Fluoride (16984-48-8)		X												
F. Nitrate-Nitrate (as N)		X												

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)		B. NO. OF ANALYSES	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		A. CONCEN- TRATION	B. MASS	A. LONG TERM AVRG. VALUE			
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			(1) CONCENTRATION	(2) MASS		
G. Nitrogen Total Organic (as N)	X													
H. Oil and Grease	X													
I. Phosphorus (as P) Total (7723-14-0)	X													
J. Sulfate (as SO ₄) (14808-79-8)	X													
K. Sulfide (as S)		X												
L. Sulfite (as SO ₃) (14265-45-3)		X												
M. Surfactants	X													
N. Aluminum Total (7429-90-5)		X												
O. Barium Total (7440-39-3)		X												
P. Boron Total (7440-42-8)		X												
Q. Cobalt Total (7440-48-4)		X												
R. Iron Total (7439-89-6)		X												
S. Magnesium Total (7439-95-4)		X												
T. Molybdenum Total (7439-98-7)		X												
U. Manganese Total (7439-96-5)		X												
V. Tin Total (7440-31-5)		X												
W. Titanium Total (7440-32-6)		X												

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)		B. NO. OF ANALYSES
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE		C. LONG TERM AVRG. VALUE		A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		
			(1) CONCENTRATION	(2) MASS	(if available) (1) CONCENTRATION	(if available) (2) MASS	(if available) (1) CONCENTRATION	(if available) (2) MASS			(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS													
1M. Antimony, Total (7440-36-9)		X											
2M. Beryllium, Total (7440-41-7)		X											
3M. Magnesium, Total (7439-95-4)		X											
4M. Molybdenum, Total (7439-98-7)		X											
5M. Tin, Total (7440-31-5)		X											
6M. Titanium, Total (7440-32-6)		X											
7M. Mercury, Total (7439-97-6)		X											
8M. Selenium, Total (7782-49-2)		X											
9M. Thallium, Total (7440-28-0)		X											
10M. Phenols, Total		X											
RADIOACTIVITY													
(1) Alpha Total		X											
(2) Beta Total		X											
(3) Radium Total		X											
(4) Radium 226 Total		X											

PLEASE PRINT OR TYPE. You may report some or all of this information on separate sheet instead of completing these pages.
 (Use the same format)
 SEE INSTRUCTIONS

FORM C
 TABLE 1 FOR 3.00 ITEM A AND B

OUTFALL NO.
 #4 (INV-5)

INTAKE AND EFFLUENT CHARACTERISTICS

PART A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

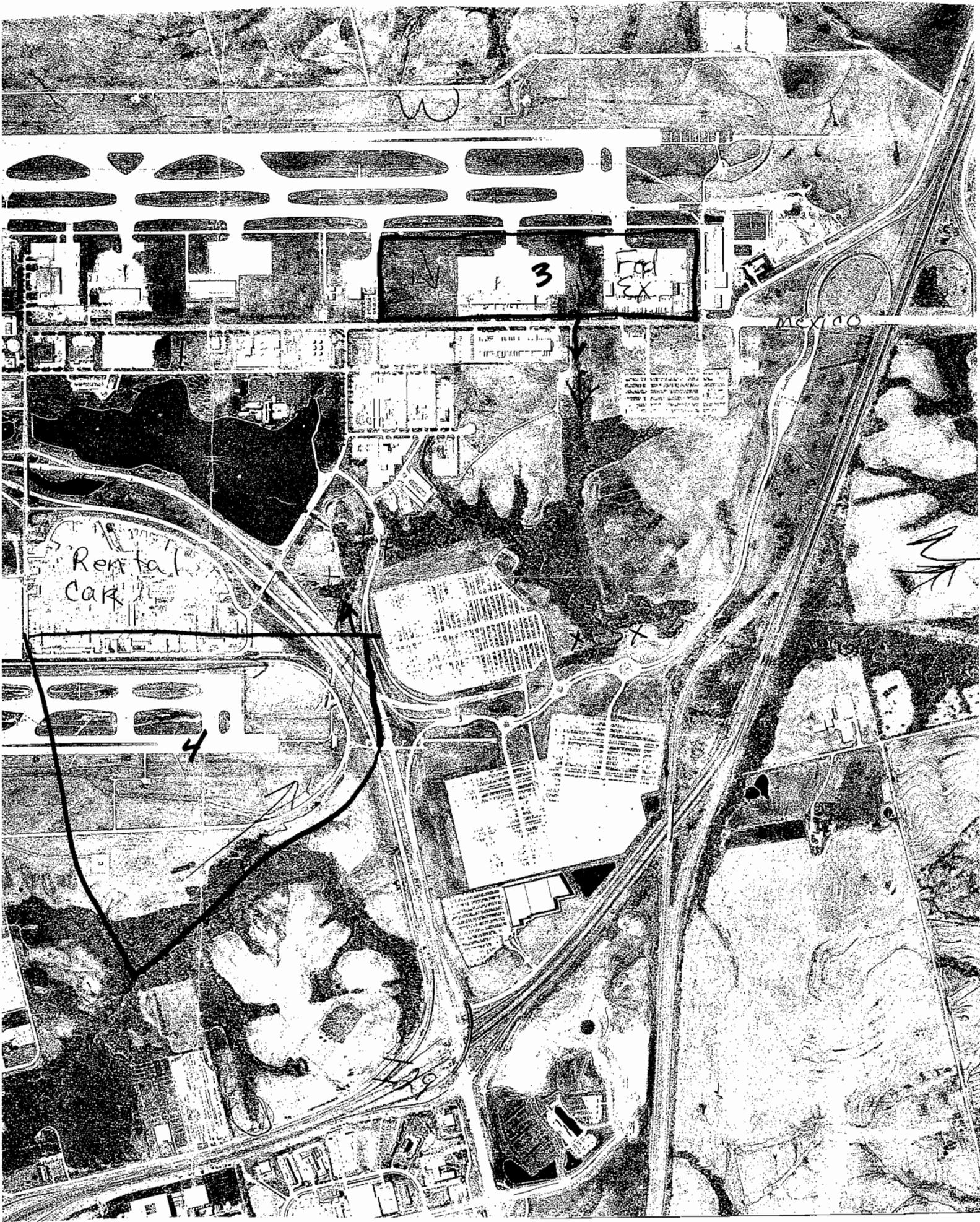
1. POLLUTANT	2. EFFLUENT				3. UNITS (specify if blank)				4. INTAKE (optional)		B. NO. OF ANALYSES	
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION		(2) MASS
A. Biochemical Oxygen Demand (BOD)												
B. Chemical Oxygen Demand (COD)	COD 86mg/L											
C. Total organic Carbon (TOC)												
D. Total Suspended Solids (TSS)												
E. Ammonia (as N)												
F. Flow	VALUE				VALUE					VALUE		
G. Temperature (winter)	VALUE 43.7 F				VALUE					VALUE		
H. Temperature (summer)	VALUE				VALUE					VALUE		
I. pH	MINIMUM 7.9	MAXIMUM			MINIMUM	MAXIMUM				STANDARD UNITS		

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results for at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS				5. INTAKE (optional)		B. NO. OF ANALYSES	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION		(2) MASS
A. Bromide (24959-67-9)		X												
B. Chlorine Total Residual		X												
C. Color		X												
D. Fecal Coliform		X												
E. Fluoride (16984-48-8)		X												
F. Nitrate—Nitrate (as N)		X												

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	
G. Nitrogen Total Organic (as N)	X												
H. Oil and Grease	X												
I. Phosphorus (as P) Total (7723-14-0)	X												
J. Sulfate (as SO ₄) (14808-79-8)	X												
K. Sulfide (as S)													
L. Sulfite (as SO ₃) (14265-45-3)	X												
M. Surfactants	X												
N. Aluminum Total (7429-90-5)		X											
O. Barium Total (7440-39-3)		X											
P. Boron Total (7440-42-8)		X											
Q. Cobalt Total (7440-48-4)		X											
R. Iron Total (7439-89-6)		X											
S. Magnesium Total (7439-95-4)		X											
T. Molybdenum Total (7439-98-7)		X											
U. Manganese Total (7439-96-5)		X											
V. Tin Total (7440-31-5)		X											
W. Titanium Total (7440-32-6)		X											

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS			5. INTAKE (optional)		B. NO. OF ANALYSES		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE					
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			(1) CONCENTRATION	(2) MASS				
METALS, AND TOTAL PHENOLS																
1M. Antimony, Total (7440-36-9)		X														
2M. Beryllium, Total (7440-41-7)		X														
3M. Magnesium, Total (7439-95-4)		X														
4M. Molybdenum, Total (7439-98-7)		X														
5M. Tin, Total (7440-31-5)		X														
6M. Titanium, Total (7440-32-6)		X														
7M. Mercury, Total (7439-97-6)		X														
8M. Selenium, Total (7782-49-2)		X														
9M. Thallium, Total (7440-28-0)		X														
10M. Phenols, Total		X														
RADIOACTIVITY																
(1) Alpha Total		X														
(2) Beta Total		X														
(3) Radium Total		X														
(4) Radium 226 Total		X														



3

MEXICO

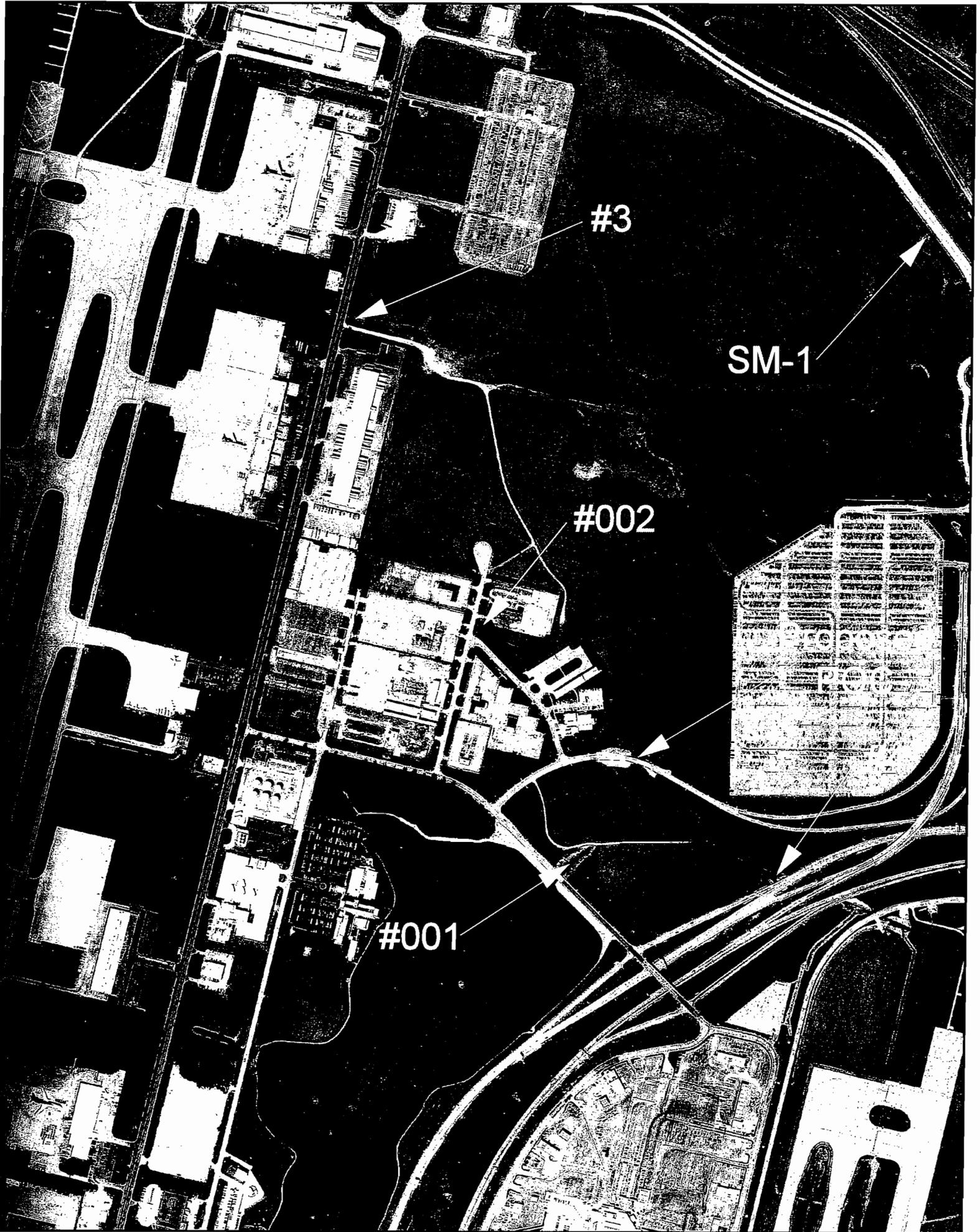
Rental
CAR

4

1. The following information is for your information only and is not intended to be used as a basis for any action. It is provided for your information only and is not intended to be used as a basis for any action. It is provided for your information only and is not intended to be used as a basis for any action.

2. The following information is for your information only and is not intended to be used as a basis for any action. It is provided for your information only and is not intended to be used as a basis for any action. It is provided for your information only and is not intended to be used as a basis for any action.

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#3

SM-1

#002

#001

Anti-backsliding

Generally:

During the data review process of renewal of this permit it was noted that the permittee, despite its best efforts, frequently exceeds permit limitations for Chemical Oxygen Demand (COD) in Outfalls number #001, and #002. The data also shows that water quality is being protected in spite of exceedances of the existing permit limits. Likewise, the data illustrated no exceedances of the Oil & Grease limits (virtually non-detect) and that new information illustrates the benefits of modified parameters.

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."

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, and as a result, 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).

Biological Oxygen Demand and Chemical Oxygen Demand:

Biochemical oxygen demand (BOD) is being removed from the permit. The 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 Airport Deicing Category, July 2009 (EPA 821-R-09-004), section 7 identifies both BOD and COD as Pollutants of Concern, however, Table 7.2 proposes using COD for regulation purposes and indicates that it is a surrogate for BOD when sampling. EPA's recommendation for a specific industry, together with the site specific data, provides sufficient justification to remove BOD monitoring from this permit and use COD as the monitored parameter.

The source of COD in both outfalls was determined to be from winter (November 1 through April 30) deicing operations. 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) of the Clean Water Act. Coupled with the facts that the permittee, despite its best efforts, has been unable to comply with the existing limits, and water quality is being protected in spite of exceedances of these limits, a change is appropriate and legally justifiable. In accordance with 40 CFR 122.44(k) the numeric effluent limitations for COD in Outfalls #001 and #002 will be replaced with BMP(s) to control the discharge of this pollutant as numeric effluent limitations are difficult to justify.

Total Petroleum Hydrocarbons (TPH) and Oil & Grease:

Oil & Grease is being eliminated from the permit. TPH and Oil & Grease are intended to reflect pollution from fuels and other petroleum based products. However, Oil & Grease measurements also detect substances that have no relationship to petroleum hydrocarbons, including algal fats and oils which are not reflective of the discharge from this industry classification. In contrast, the TPH analysis is specific to petroleum hydrocarbons and provides insights into the sources of elevated concentrations. Additionally, testing for TPH in lieu of Oil & Grease will allow the permittee to more accurately analyze the discharge, identify potential sources, and take focused corrective action. This approach supports and strengthens the overall BMP approach at this facility and the data collected to date justify the modification. This modification conforms to the anti-backsliding requirements established in Section 402(o).2.B.i of the Clean Water Act.

Benchmarks:

The site-specific benchmarks were calculated using the site's reported monitoring data from April 11, 2007 through March 8, 2012 and non-parametric statistical techniques. Benchmarks for daily maximum concentrations were calculated as the 99th percentile value of the dataset for each season. "Long-term average" benchmark concentrations were calculated as the 95th 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 sample sets drawn from the original dataset. Each new 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 new dataset composed of the large number of representative sample sets, and these values are representative estimates of the original dataset. In this case, 10,000 5-year seasonal sample sets were generated for COD at Outfall 001 and the 95th percentile median value was calculated for each season.

The daily maximum benchmark concentrations, for both the deicing and non-deicing seasons were calculated separately as the 99th percentile values of the original data set.

The "long-term average" benchmark concentrations, for both the deicing and non-deicing seasons were calculated using the "bootstrap" technique described above as the 95th percentile of the median concentrations (deicing season and non-deicing season of the historical dataset used for this permit).

When evaluating follow-up activities based on a benchmark exceedence, it should be noted that the 99th percentile values defined by the statistical methodology outlined above can be expected to be exceeded once every 16.5 years on average. Similarly, the 95th percentile median values defined by the "bootstrap" technique can be expected to be exceeded once every 3.5 years on average. In both cases, such exceedances may, but do not necessarily, indicate unacceptable operation of the existing collection system