

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**

MISSOURI CLEAN WATER COMMISSION



**MISSOURI STATE OPERATING PERMIT**

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

Permit No. MO-0109878

Owner: City of St. Joseph  
Address: 11<sup>th</sup> and Frederick, St. Joseph, MO 64501

Continuing Authority: Same as above  
Address: Same as above

Facility Name: St. Joseph Sanitary Landfill  
Facility Address: 9431 50<sup>th</sup> Road S.E., St. Joseph, MO 64507

Legal Description: See Page Two  
Latitude/Longitude: See Page Two

Receiving Stream: Unnamed Tributary to Pigeon Creek (U)  
First Classified Stream and ID: Pigeon Creek (C) (00349)  
USGS Basin & Sub-watershed No.: (10240012 – 130001)

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

**FACILITY DESCRIPTION**

All Outfalls – Open Sanitary Waste Landfill – SIC # 4953

See page two for outfall descriptions

**Leachate cannot be discharged. Stormwater that has come into contact with leachate is considered leachate and cannot be discharged. Leachate and stormwater that has come into contact with leachate must be managed in accordance with the provisions contained in the Missouri Solid Waste Management Laws, regulations and Sanitary Landfill Operating Permit; and Hazardous Waste Program (if applicable).**

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.

April 24, 2009  
Effective Date

April 12, 2012  
Modified Date

Sara Parker Pauley  
Sara Parker Pauley, Director, Department of Natural Resources

April 23, 2014  
Expiration Date

Dorothy Franklin  
Dorothy Franklin, Director, Kansas City Regional Office

FACILITY DESCRIPTION (continued)

**Outfall #001** – Stormwater Retention Basin

Legal Description: SW ¼, NE ¼, Sec. 13, T56N, R35W, Buchanan County

Latitude/Longitude: 3940057/-09446218

Design Flow: 43.3 MGD

Actual Flow is dependent on precipitation.

**Outfall #002** – Stormwater Retention Basin

Legal Description: SW ¼, NE ¼, Sec. 13, T56N, R35W, Buchanan County

Latitude/Longitude: 3940062/-09446334

Design Flow: 86 MGD

Actual Flow is dependent on precipitation.

**Outfall #003** – Stormwater Retention Basin

Legal Description: SE ¼, NE ¼, Sec. 13, T56N, R35W, Buchanan County

Latitude/Longitude: +3940055/-09446039

Design Flow: 101.5 MGD

Actual Flow is dependent on precipitation.

**Outfall #004** – Downstream Monitoring Point

Legal Description: NW ¼, SW ¼, Sec. 18, T56N, R34W, Buchanan County

Latitude/Longitude: 3939599/-09445583

**Outfall #005** – Stormwater Retention Basin

Legal Description: NE ¼, NE ¼, Sec. 13, T56N, R35W, Buchanan County

Latitude/Longitude: 3940304/-09446156

Design Flow: 62 MGD

Actual Flow is dependent on precipitation.

**Outfall #006** – Stormwater Retention Basin

Legal Description: SE ¼, NE ¼, Sec. 13, T56N, R35W, Buchanan County

Latitude/Longitude: 3940176/-09446030

Design Flow: 70 MGD

Actual Flow is dependent on precipitation.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 3 of 12	
					PERMIT NUMBER MO-0109878	
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OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfalls #001, #002, #003, #005, #006</u> (Note 1)						
Flow	MGD	*		*	Once/Quarter**	24 hr. estimate
Rainfall	Inches	*		*	Daily Measurement	Total
Chemical Oxygen Demand	mg/L	90		60	Once/Quarter**	Grab
Biochemical Oxygen Demand <sub>5</sub>	mg/L	60		45	Once/Quarter**	Grab
Total Suspended Solids	mg/L	80		60	Once/Quarter**	Grab
pH	SU	***		***	Once/Quarter**	Grab
Settleable Solids	mL/L/hr	1.5		1.0	Once/Quarter**	Grab
Total Dissolved Solids	mg/L	*		*	Once/Quarter**	Grab
Conductivity	µS/cm 25°C	*		*	Once/Quarter**	Grab
Ammonia as N	mg/L	*		*	Once/Quarter**	Grab
Chlorides	mg/L	*		*	Once/Quarter**	Grab
Chloride Plus Sulfates	mg/L	1000		*	Once/Quarter**	Grab
Iron, Total Recoverable	µg/L	*		*	Once/Quarter**	Grab
Copper, Total Recoverable	µg/L	*		*	Once/Quarter**	Grab
Zinc, Total Recoverable	µg/L	*		*	Once/Quarter**	Grab
Total Hardness	mg/L	*		*	Once/Quarter**	Grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>JULY 28, 2009</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I</u> , STANDARD CONDITIONS DATED <u>October 1, 1980</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

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<u>Outfalls #001, #002, #003, #005, #006</u> (Note 1)						
Calcium	mg/L	*		*	Once/Year****	Grab
Fluoride	mg/L	*		*	Once/Year****	Grab
Total Organic Carbon	mg/L	*		*	Once/Year****	Grab
Oil & Grease	mg/L	15		10	Once/Year****	Grab
Nitrate as N	mg/L	*		*	Once/Year****	Grab
Benzene	µg/L	*		*	Once/Year****	Grab
Ethylbenzene	µg/L	*		*	Once/Year****	Grab
Toluene	mg/L	*		*	Once/Year****	Grab
Total Xylene	mg/L	*		*	Once/Year****	Grab
Arsenic, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Barium, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Boron, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Chromium (III), Total Recoverable	µg/L	*		*	Once/Year****	Grab
Chromium (VI), Total Recoverable	µg/L	*		*	Once/Year****	Grab
Lead, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Magnesium, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Manganese, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Selenium, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Sodium, Total Recoverable	mg/L	*		*	Once/Year****	Grab
Vanadium, Total Recoverable	µg/L	*		*	Once/Year****	Grab
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<u>Outfalls #001, #002, #003, #005, #006</u> (Note 1)						
Flow	MGD	*		*	Once/Quarter**	24 hr. estimate
Rainfall	Inches	*		*	Daily Measurement	Total
Chemical Oxygen Demand	mg/L	90		60	Once/Quarter**	Grab
Biochemical Oxygen Demand <sub>5</sub>	mg/L	60		45	Once/Quarter**	Grab
Total Suspended Solids	mg/L	80		60	Once/Quarter**	Grab
pH	SU	***		***	Once/Quarter**	Grab
Settleable Solids	mL/L/hr	1.5		1.0	Once/Quarter**	Grab
Total Dissolved Solids	mg/L	*		*	Once/Quarter**	Grab
Conductivity	µS/cm 25°C	*		*	Once/Quarter**	Grab
Ammonia as N	mg/L	*		*	Once/Quarter**	Grab
Chlorides	mg/L	858.7		428	Once/Quarter**	Grab
Chloride Plus Sulfates	mg/L	1000		*	Once/Quarter**	Grab
Iron, Total Recoverable	µg/L	1640		816	Once/Quarter**	Grab
Copper, Total Recoverable	µg/L	26		13	Once/Quarter**	Grab
Zinc, Total Recoverable	µg/L	210		104	Once/Quarter**	Grab
Total Hardness	mg/L	*		*	Once/Quarter**	Grab
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<u>Outfalls #001, #002, #003, #005, #006</u> (Note 1)						
Calcium	mg/L	*		*	Once/Year****	Grab
Fluoride	mg/L	6.5		3.3	Once/Year****	Grab
Total Organic Carbon	mg/L	*		*	Once/Year****	Grab
Oil & Grease	mg/L	15		10	Once/Year****	Grab
Nitrate as N	mg/L	*		*	Once/Year****	Grab
Benzene	µg/L	*		*	Once/Year****	Grab
Ethylbenzene	µg/L	*		*	Once/Year****	Grab
Toluene	mg/L	*		*	Once/Year****	Grab
Total Xylene	mg/L	*		*	Once/Year****	Grab
Arsenic, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Barium, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Boron, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Chromium (III), Total Recoverable	µg/L	*		*	Once/Year****	Grab
Chromium (VI), Total Recoverable	µg/L	*		*	Once/Year****	Grab
Lead, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Magnesium, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Manganese, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Selenium, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Sodium, Total Recoverable	mg/L	*		*	Once/Year****	Grab
Vanadium, Total Recoverable	µg/L	*		*	Once/Year****	Grab
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		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #004, Downstream Monitoring</u> (Note 1)						
Flow	MGD	*		*	Once/Quarter**	24 hr. estimate
Rainfall	Inches	*		*	Daily Measurement	Total
Chemical Oxygen Demand	mg/L	*		*	Once/Quarter**	Grab
Biochemical Oxygen Demand <sub>5</sub>	mg/L	*		*	Once/Quarter**	Grab
Total Suspended Solids	mg/L	*		*	Once/Quarter**	Grab
pH	SU	*		*	Once/Quarter**	Grab
Settleable Solids	mL/L/hr	*		*	Once/Quarter**	Grab
Total Dissolved Solids	mg/L	*		*	Once/Quarter**	Grab
Conductivity	µS/cm 25°C	*		*	Once/Quarter**	Grab
Ammonia as N	mg/L	*		*	Once/Quarter**	Grab
Chloride	mg/L	*		*	Once/Quarter**	Grab
Chloride Plus Sulfates	mg/L	*		*	Once/Quarter**	Grab
Iron, Total Recoverable	µg/L	*		*	Once/Quarter**	Grab
Copper, Total Recoverable	µg/L	*		*	Once/Quarter**	Grab
Zinc, Total Recoverable	µg/L	*		*	Once/Quarter**	Grab
Total Hardness	mg/L	*		*	Once/Quarter**	Grab
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		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #004, Downstream Monitoring</u> (Note 1)						
Calcium	mg/L	*		*	Once/Year****	Grab
Fluoride	mg/L	*		*	Once/Year****	Grab
Total Organic Carbon	mg/L	*		*	Once/Year****	Grab
Oil & Grease	mg/L	*		*	Once/Year****	Grab
Nitrate as N	mg/L	*		*	Once/Year****	Grab
Benzene	µg/L	*		*	Once/Year****	Grab
Ethylbenzene	µg/L	*		*	Once/Year****	Grab
Toluene	mg/L	*		*	Once/Year****	Grab
Total Xylene	mg/L	*		*	Once/Year****	Grab
Arsenic, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Barium, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Boron, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Chromium (III), Total Recoverable	µg/L	*		*	Once/Year****	Grab
Chromium (VI), Total Recoverable	µg/L	*		*	Once/Year****	Grab
Lead, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Magnesium, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Manganese, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Selenium, Total Recoverable	µg/L	*		*	Once/Year****	Grab
Sodium, Total Recoverable	mg/L	*		*	Once/Year****	Grab
Vanadium, Total Recoverable	µg/L	*		*	Once/Year****	Grab

MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE OCTOBER 28, 2009. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

**B. STANDARD CONDITIONS**

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

\* Monitoring requirement only.

\*\* Sample once per quarter in the months that a discharge occurs. (see table below for details)

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

\*\*\* 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.

\*\*\*\* Sample once per year in any month that a discharge occurs.

**Note 1** – Storm water samples shall be collected within the first 60 minutes of storm events of 0.1 inches or greater, that result in a discharge. Storm events include rainfall as well as run-off from the melting of frozen precipitation.

C. SPECIAL CONDITIONS

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

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.
3. Changes in Discharges of Toxic Substances

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

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

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

5. Water Quality Standards

- (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.

C. SPECIAL CONDITIONS (continued)

(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.

6. The permittee shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be prepared within 30 days and implemented within 90 days of permit issuance. The SWPPP must be kept on-site and should not be sent to DNR unless specifically requested. The SWPPP must be reviewed and updated, if needed, every five (5) years or as site conditions change. 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:

Storm Water Management For Industrial Activities, Developing Pollution Prevention Plans and Best Management Activities, (Document number EPA 832-R-92-006) published by the United States Environmental Protection Agency (USEPA) in September 1992.

The SWPPP must include the following:

- (a) 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 #7 below.
- (b) The SWPPP must include a schedule for a bi-monthly site inspection and a brief written report. The inspections must include observation and evaluation of BMP effectiveness. Deficiencies must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report, including photographs. Any corrective measure that necessitates major construction may also need a construction permit. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to DNR personnel upon request.
- (c) A provision for designating an individual to be responsible for environmental matters.
- (d) 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 DNR.

7. 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 storm water 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 storm water or provide other prescribed BMP's such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.

### C. SPECIAL CONDITIONS

- (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.
8. The purpose of the SWPPP and the BMPs listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effective in preventing pollution [10 CSR 20-2.010(56)] of waters of the state, and corrective actions means the facility took steps to eliminate the deficiency.
9. 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.
10. Before releasing water that has accumulated in secondary containment areas it must be examined for hydrocarbon odor and presence of a sheen. When the presence of hydrocarbons is indicated, and 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 so desires to use other approved testing methods (i.e. EPA 1664), they may do so. If the concentration for TPH exceeds 10mg/L, the water shall be taken to a WWTP for treatment.
11. 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.

### REPORTING OF EFFLUENT VIOLATIONS

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 of Natural Resources 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 storm water 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 Department of Natural Resources (this paragraph supersedes Part I, Section B: e.A. Noncompliance Notification).

### RECORDS, RETENTION AND RECORDING

Monitoring reports shall be submitted within 28 days after the end of each quarter. All sampling data shall be maintained by the permittee for a period of five (5) years and shall be supplied to the Department of Natural Resources upon request (supersedes Part I, Section A:7. Records Retention). A copy of all of the sampling data must be submitted with an application for reissuance of this permit.

### PERMIT TRANSFER

This permit may be transferred to a new owner by submitting an "Application for Transfer of Operating Permit" signed by the seller and buyer of the facility, along with the appropriate modification fee.

PERMIT RENEWAL REQUIREMENTS

Unless this permit is terminated, the permittee shall submit an application for the renewal of this permit no later than six (6) months prior to the permit's expiration date. Failure to apply for renewal may result in termination of this permit and enforcement action to compel compliance with this condition and the Missouri Clean Water Law.

TERMINATION

In order to terminate this permit, the permittee shall notify the department by submitting Form J, included with the State Operating Permit. The permittee shall complete Form J and mail it to the department at the address noted in the cover letter of this permit. Proper closure of any storage structure is required prior to permit termination. A closure plan shall be submitted to the department and approved prior to initiating closure activities.

DUTY OF COMPLIANCE

The permittee shall comply with all conditions of this permit. Any noncompliance with this permit constitutes a violation of Chapter 644, Missouri Clean Water Law, and 10 CSR 20-6. Noncompliance may result in enforcement action, termination of this authorization, or denial of the permittee's request for renewal.

**MISSOURI DEPARTMENT OF NATURAL RESOURCES  
FACT SHEET  
INDUSTRIAL STORM WATER RUNOFF FROM LANDFILL ACTIVITIES  
STANDARD INDUSTRIAL CLASSIFICATION (SIC): 4953  
FOR THE PURPOSE OF RENEWAL  
OF  
MO-0109878  
ST. JOSEPH SANITARY LANDFILL**

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 (MCWL)" 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 Fact Sheet 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 Fact Sheet is not an enforceable part of an operating permit.

**Part A – Applicability & Facility Description**

Landfill are to obtain a MSOP in accordance the MCWL, documented above, and its implementing regulations 10 CSR 20-6.010(1)(A); 10 CSR 20-6.010(5)(A); and 10 CSR 20-6.200(1)(A). Storm water runoff from landfills are considered Industrial activities in accordance with 10 CSR 20-6.200(2)(B)3.B. Closed landfills may also be required to maintain a MSOP in accordance with 10 CSR 20.600(1)(B)10.

Facility Description:

This facility is an active landfill accepting non-hazardous materials only including municipal and construction solid waste and tires from an on-site tire processor. Five sedimentation basins collect stormwater runoff that has not come into contact with leachate. Leachate collects in two basins and is treated at the St. Joseph POTW.

**Leachate must be handled in a manner where discharge is not allowed and in accordance with Hazardous Waste Program (if applicable) and Solid Waste Management Program requirements.**

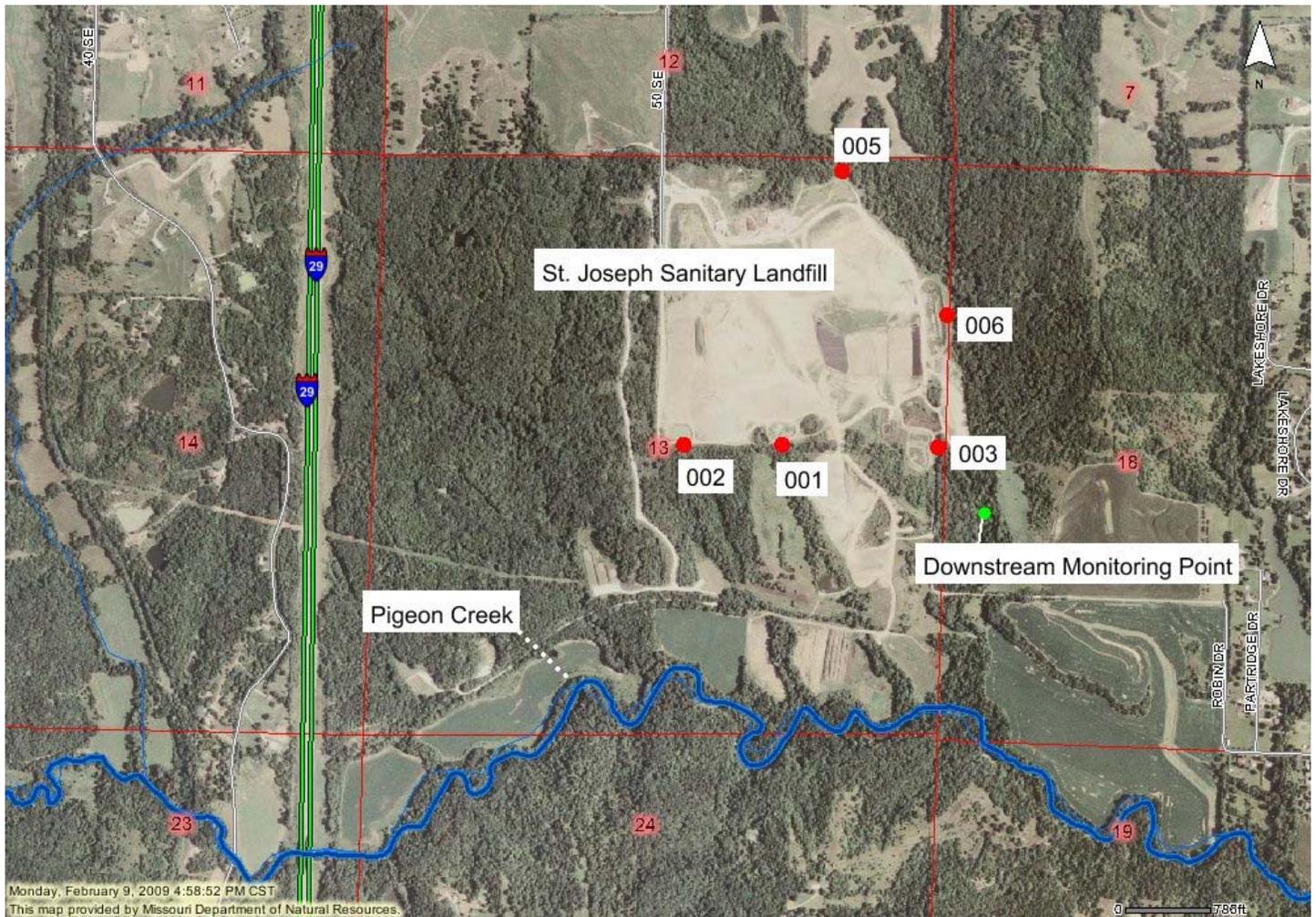
Actual flow dependent upon precipitation.

**Part B – Outfall Information & Descriptions**

**OUTFALL(S) TABLE:**

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	Variable	BMP*	Industrial – Storm water runoff	0.56
002	Variable	BMP*	Industrial – Storm water runoff	0.56
003	Variable	BMP*	Industrial – Storm water runoff	0.61
004	Variable	N/A	Downstream Monitoring Point	0.45
005	Variable	BMP*	Industrial – Storm water runoff	1.35
002	Variable	BMP*	Industrial – Storm water runoff	0.99

\* - BMP means Best Management Practices



**Outfall #001**

Legal Description: SW ¼, NE ¼, Sec. 13, T56N, R35W  
 Latitude/Longitude: 3940057/-09446218  
 Receiving Stream: Unnamed Tributary to Pigeon Creek (U)  
 First Classified Stream and ID: Pigeon Creek (C) (00349)  
 USGS Basin & Sub-watershed No.: (10240012 – 130001)

**Outfall #002**

Legal Description: SW ¼, NE ¼, Sec. 13, T56N, R35W  
 Latitude/Longitude: 3940062/-09446334  
 Receiving Stream: Unnamed Tributary to Pigeon Creek (U)  
 First Classified Stream and ID: Pigeon Creek (C) (00349)  
 USGS Basin & Sub-watershed No.: (10240012 – 130001)

**Outfall #003**

Legal Description: SE ¼, NE ¼, Sec. 13, T56N, R35W  
 Latitude/Longitude: +3940055/-09446039  
 Receiving Stream: Unnamed Tributary to Pigeon Creek (U)  
 First Classified Stream and ID: Pigeon Creek (C) (00349)  
 USGS Basin & Sub-watershed No.: (10240012 – 130001)

**Outfall #004 – Downstream Monitoring Point**

Legal Description: NW ¼, SW ¼, Sec. 18, T56N, R34W  
 Latitude/Longitude: 3939599/-09445583  
 Receiving Stream: Unnamed Tributary to Pigeon Creek (U)  
 First Classified Stream and ID: Pigeon Creek (C) (00349)  
 USGS Basin & Sub-watershed No.: (10240012 – 130001)

**Outfall #005**

Legal Description: NE ¼, NE ¼, Sec. 13, T56N, R35W  
 Latitude/Longitude: 3940304/-09446156  
 Receiving Stream: Unnamed Tributary to Pigeon Creek (U)  
 First Classified Stream and ID: Pigeon Creek (C) (00349)  
 USGS Basin & Sub-watershed No.: (10240012 – 130001)

**Outfall #006**

Legal Description: SE ¼, NE ¼, Sec. 13, T56N, R35W  
 Latitude/Longitude: 3940176/-09446030  
 Receiving Stream: Unnamed Tributary to Pigeon Creek (U)  
 First Classified Stream and ID: Pigeon Creek (C) (00349)  
 USGS Basin & Sub-watershed No.: (10240012 – 130001)

Water Quality History:

Quarterly discharge monitoring reports from the previous permit cycle were reviewed. The following effluent limit exceedances were found:

**Outfall #001**

- 2003 – 1 TSS
- 2004 – 2 TSS
- 2005 – 1 BOD, 1 COD, 3 TSS
- 2006 – 2 TSS
- 2007 – 3 TSS
- 2008 – 1 COD, 1 TSS

**Outfall #002**

- 2003 – 3 TSS
- 2004 – 2 TSS
- 2005 – 3 TSS
- 2006 – 2 TSS
- 2007 – 3 TSS
- 2008 – 1 TSS

**Outfall #003**

- 2003 – 1 pH, 2 TSS
- 2004 – 2 TSS
- 2005 – 1 BOD, 4 TSS
- 2006 – 1 TSS
- 2007 – 1 BETX, 3 TSS
- 2008 – 1 BOD, 1 COD, 2 TSS

Comments:

The previous operating permit for this facility had effluent limitations and monitoring only for Outfalls #001, #002, and #003. Since the issuance of the previous permit two outfalls have been added. A sedimentation basin that feeds outfall #005 lies on the north end of the landfill. A sedimentation basin that feeds outfall #006 lies on the eastern side of the landfill and has not yet begun to discharge stormwater. Outfall #004 is a monitoring point located in an Unnamed Tributary to Pigeon Creek, downstream from outfalls #003, #005 and #006.

2012 Modification:

This permit was modified on April 12, 2012 by Jimmy Coles, KCRO to correct a typographical error. The interim and final permit limits and the downstream monitoring requirement for Fluoride were originally to intend to be mg/L. The units placed in Table A, accidentally, were µg/L. This modification is simply to correct that typo. No other parts of this permit’s effluent limitations or conditions were modified.

**Part C – 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 the below listed seven (7) categories. Each category list 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.

- Missouri or Mississippi River [10 CSR 20-7.015(2)]:
- Lake or Reservoir [10 CSR 20-7.015(3)]:
- Losing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:
- Subsurface Water [10 CSR 20-7.015(7)]:
- 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 1<sup>st</sup> classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

**RECEIVING STREAM(S) TABLE:**

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Unnamed Tributary to Pigeon Creek	U	N/A	General Criteria	10240012	Central Plains/ Nishnabotna/ Platte
Pigeon Creek	C	00349	LWW, AQL, 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

\*\*\* - UAA conducted on October 8, 2007 and approved on March 28, 2008.

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

### **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.

- All limits in this Factsheet are at least as protective as those previously established; therefore, backsliding does not apply.

### **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.

As per [10 CSR 20-7.031(2)(D)], the three (3) levels of protection provided by the antidegradation policy in subsections (A), (B), and (C) of this section shall be implemented according to procedures developed by the department. On April 20, 2007, the Missouri Clean Water Commission approved *Missouri Antidegradation Rule and Implementation Procedure* (Antidegradation Rule), which is applicable to new or upgraded/expanded facilities. The implementation of the Antidegradation Rule will be implemented upon promulgation, which occurred on August 31, 2008.

### **COMPLIANCE AND ENFORCEMENT:**

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

Not Applicable ;

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

### **FLOW BASED PERMITTING:**

A standard mass-balance equation cannot be calculated for storm water from this facility because the flow from the facility and flow in the receiving stream cannot be determined for conditions on any given day. The amount of storm water discharged from the facility will vary based on previous rainfall, soil saturation, humidity, detention time, BMPs, surface permeability, etc. Flow in the receiving stream will vary based on similar climactic conditions, size of watershed, amount of surfaces with reduced permeability (houses, parking lots, and the like) in the watershed, hydrogeology, topography, etc.

It is likely that sufficient rainfall to cause a discharge for four continuous days from a facility will also cause some significant amount of flow in the receiving stream. Chronic WQSs are based on a four-day exposure (except Ammonia, which is based on a thirty day exposure). In the event that discharge does occur from this facility for four continuous days, some amount of flow will occur in the receiving stream. This flow will dilute storm water discharges from a facility. For these reasons, most industrial storm water facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute WQSs are based on a one hour of exposure, and must be protected at all times in unclassified streams, and within mixing zones of class P streams [10 CSR 20-7.031(3) and (4)]. Therefore, industrial storm water facilities with toxic contaminants do have the potential to cause a violation of acute WQSs if those toxic contaminants occur in sufficient amounts.

It is due to the items stated above that staff drafting this fact sheet are unable to perform statistical Reasonable Potential Analysis and calculate Wasteload Allocations via a mass-balance equation for effluent limit determination. However, staff may use their best professional judgment in determining if a facility has a potential to violate Missouri's Water Quality Standards. Effluent limitations are based on actual criteria that are subjected to Long Term Averages and then converted into Maximum Daily Limits or Average Monthly Limits.

**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):**

A plan to schedule activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. The plan may include, but is not limited to, treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

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.

**WLA MODELING:**

Not Applicable ;

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

**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 ;

In accordance with the 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. Furthermore, WET testing is a means by which the department determines that [10 CSR 20-7.031(3)(D, F, & G)] are being met by the permitted facility. In addition to justification for the WET testing, WET tests are required under [10 CSR 20-6.010(8)(A)4] to be performed by specialist who are properly trained in conducting the test according to the methods prescribed by the Federal Government as referenced in [40 CFR Part 136]. WET test will be required by all facilities meeting the following criteria:

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- 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.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH<sub>3</sub>)
- Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.
- Other – please justify.

Not Applicable ;

At this time, the permittee is not required to conduct WET test for this facility.

**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.

## Part E – Effluent Limits Determination

*Outfalls #001, #002, #003, #005, #006 – Effluent Limitation Table:*

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	MGD	1	*		*	NO	SAME
RAINFALL	Inches	9	*		*	NO	SAME
COD	mg/L	9	90		60	YES	120/90
BOD <sub>5</sub>	mg/L	1/9	60		45	NO	SAME
TSS	mg/L	9	80		60	NO	SAME
pH	SU	1	6.5 – 9.0		6.5 – 9.0	YES	6.0 – 9.0
SETTLABLE SOLIDS	mL/L/hr	1/9	1.5		1.0	NO	SAME
OIL & GREASE	mg/L	1/9	15		10	NO	SAME
CONDUCTIVITY	µS/cm @ 25°C	9	*		*	NO	SAME
TOTAL DISSOLVED SOLIDS	mg/L	9	*		*	NO	SAME
TOTAL AMMONIA AS N	mg/L	1/2/5/9	*		*	NO	SAME
BENZENE	µg/L	1/9	*		*	N/A	**
ETHYLBENZENE	µg/L	1/9	*		*	N/A	**
TOLUENE	mg/L	1/9	*		*	N/A	**
TOTAL XYLENE	mg/L	1/9	*		*	N/A	**
TOTAL ORGANIC CARBON	mg/L	9	*		*	NO	SAME
NITRATE AS N	mg/L	9	*		*	N/A	**
CHLORIDES	mg/L	1/9	858.7		428	N/A	**
CHLORIDE + SULFATES	mg/L	1/9	1000		*	NO	SAME
TOTAL HARDNESS	mg/L	9	*		*	NO	SAME
ARSENIC, TR	µg/L	9	*		*	NO	SAME
BARIUM, TR	µg/L	9	*		*	NO	SAME
BORON, TR	µg/L	9	*		*	NO	SAME
CALCIUM	mg/L	9	*		*	NO	SAME
CHROMIUM (III), TR	µg/L	9	*		*	N/A	**
CHROMIUM (VI), TR	µg/L	9	*		*	N/A	**
COPPER, TR	µg/L	3	26		13	YES	*
FLUORIDE	mg/L	9	6.5		3.3	YES	*
IRON, TR	µg/L	3	1640		816	YES	*
LEAD, TR	µg/L	9	*		*	NO	SAME
MAGNESIUM, TR	µg/L	9	*		*	NO	SAME
MANGANESE, TR	µg/L	9	*		*	NO	SAME
SELENIUM, TR	µg/L	9	*		*	NO	SAME
SODIUM, TR	mg/L	9	*		*	NO	SAME
VANADIUM, TR	µg/L	9	*		*	NO	SAME
ZINC, TR	µg/L	3	210		104	YES	*
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

\* - Monitoring requirement only

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

TR – means Total Recoverable

### Basis for Limitations Codes:

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

## OUTFALLS #001, #002, #003, #005, #006 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** Monitoring only requirement 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 to determine an alternate location for flow monitoring.
- **Rainfall.** Monitoring only requirement. Precipitation data obtained from DMRs is used to aid in the determination of this facilities specific runoff coefficient and theoretical loading in the watershed.
- **Chemical Oxygen Demand (COD).** Effluent limitations of 90 mg/L as a Daily Maximum and 60 mg/L as a Monthly Average are applicable to this facility and are consistent with other landfill operating permits.
- **Biochemical Oxygen Demand (BOD<sub>5</sub>).** Effluent limitations have been retained from previous state operating permit.
- **Total Suspended Solids (TSS).** Effluent limitations have been retained from previous state operating permit.
- **Total Dissolved Solids (TDS).** Monitoring requirement retained from previous state operating permit.
- **pH.** Effluent limitation range is from 6.5 to 9.0 Standard pH Units (SU), as per [10 CSR 20-7.031(4)(E)]. pH is not to be averaged.
- **Settleable Solids.** Effluent limitations of 1.5 mL per L per hour as a Daily Maximum and 1.0 mL per L per hour as a Monthly Average are applicable and are consistent with other landfill operating permits.
- **Conductivity.** An indicator parameter for the total ions which conduct electrical current. In a sample of water, conductivity may be indicative of the total contamination present in the sample.
- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Total Ammonia Nitrogen.** Monitoring only requirement. If data obtained during this permit cycle indicates that this facility has the reasonable potential to violate water quality standards, water quality based effluent limits will be established at the next permit renewal.
- **Nitrate as N.** Monitoring only requirement. If data obtained during this permit cycle indicates that this facility has the reasonable potential to violate water quality standards, water quality based effluent limits will be established at the next permit renewal.
- **Chlorides + Sulfate.** Effluent limitation of 1000 mg/L as a Daily Maximum is applicable as per [10 CSR 20-7.031(4)(L)1.].
- **Chlorides.** Protection of Aquatic Life Acute Criteria of 860 mg/L is applicable as per [10 CSR 20-7.031 Table A]. No mixing considerations allowed; therefore the Acute Criteria (or other criteria) = the WLA.

Acute WLA = 860 mg/L

$LTA_a = 860 \text{ mg/L} (0.321) = 276.1 \text{ mg/L}$  [CV = 0.6, 99<sup>th</sup> Percentile]

$MDL = 276.1 \text{ mg/L} (3.11) = 858.7 \text{ mg/L}$  [CV = 0.6, 99<sup>th</sup> Percentile]

$AML = 276.1 \text{ mg/L} (1.55) = 428 \text{ mg/L}$  [CV = 0.6, 95<sup>th</sup> Percentile, n =4]

- **Calcium.** Monitoring requirement retained from previous state operating permit.
- **Fluoride.** If the receiving water has a designated use of LWW, DWS, or GRW, then the criteria is 4.0 mg/L. The permit writer will need to review the DMRs to determine if this parameter is applicable. Protection of (LWW, DWS, or GRW) of 4.0 mg/L is applicable as per [10 CSR 20-7.031 Table A]. No mixing considerations allowed; therefore the (criteria) = the WLA.

WLA = 4.0 mg/L

$LTA_a = 4.0 \text{ mg/L} (0.527) = 2.1 \text{ mg/L}$  [CV = 0.6, 99<sup>th</sup> Percentile]

$MDL = 2.1 \text{ mg/L} (3.11) = 6.5 \text{ mg/L}$  [CV = 0.6, 99<sup>th</sup> Percentile]

$AML = 2.1 \text{ mg/L} (1.55) = 3.3 \text{ mg/L}$  [CV = 0.6, 95<sup>th</sup> Percentile, n =4]

- **Benzene**. Monitoring requirement only. The previous state operating permit contained a combination parameter known as BETX, which was Benzene, Ethylbenzene, Toluene, and Total Xylene. This parameter needs further monitoring to determine if it has potential to violate Missouri’s WQS.
- **Ethylbenzene**. Monitoring requirement only. The previous state operating permit contained a combination parameter known as BETX, which was Benzene, Ethylbenzene, Toluene, and Total Xylene. This parameter needs further monitoring to determine if it has potential to violate Missouri’s WQS.
- **Toluene**. Monitoring requirement only. The previous state operating permit contained a combination parameter known as BETX, which was Benzene, Ethylbenzene, Toluene, and Total Xylene. This parameter needs further monitoring to determine if it has potential to violate Missouri’s WQS.
- **Total Xylene**. Monitoring requirement only. The previous state operating permit contained a combination parameter known as BETX, which was Benzene, Ethylbenzene, Toluene, and Total Xylene. This parameter needs further monitoring to determine if it has potential to violate Missouri’s WQS.
- **Total Organic Carbon**. Monitoring requirement only that’s has been retained from the previous operating permit. Total Organic Carbon is a highly accurate measurement of the organic content of a water sample and is a general indicator of water pollution.

**Metals**

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and “The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and hardness of 193 mg/L.

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

METAL	CONVERSION FACTORS
	ACUTE
Copper	0.960
Zinc	0.978

Conversion factors for Cd and Pb are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 193 mg/L.

- **Total Hardness**. Monitoring only requirement due to the fact that Metals toxicity varies by hardness.
- **Arsenic, Total Recoverable**. The previous state operating permit for this facility required annual monitoring for this parameter. This metal has been detected in collected discharge samples at levels that would not violate water quality standards. Annual monitoring has been retained so at the next permit renewal it can be determined if the reasonable potential to violate water quality standards exists.
- **Barium, Total Recoverable**. The previous state operating permit for this facility required annual monitoring for this parameter. This metal has been detected in collected discharge samples at levels that would not violate water quality standards. Annual monitoring has been retained so at the next permit renewal it can be determined if the reasonable potential to violate water quality standards exists.
- **Boron, Total Recoverable**. The previous state operating permit for this facility required annual monitoring for this parameter. This metal has been detected in collected discharge samples at levels that would not violate water quality standards. Annual monitoring has been retained so at the next permit renewal it can be determined if the reasonable potential to violate water quality standards exists.

- **Chromium (III), Total Recoverable.** The previous state operating permit for this facility required annual monitoring for Total Chromium. Total Chromium was detected in collected discharge samples at levels that would not violate water quality standards. Annual monitoring has been divided into the trivalent and hexavalent species of chromium so at the next permit renewal it can more accurately be determined if the reasonable potential to violate water quality standards exists.
- **Chromium (VI), Total Recoverable.** The previous state operating permit for this facility required annual monitoring for Total Chromium. Total Chromium was detected in collected discharge samples at levels that would not violate water quality standards. Annual monitoring has been divided into the trivalent and hexavalent species of chromium so at the next permit renewal it can more accurately be determined if the reasonable potential to violate water quality standards exists.
- **Copper, Total Recoverable.** Protection of Aquatic Life Acute Criteria (CMC) = 25 µg/L. No mixing allowed; therefore, the CMC = the WLA (after conversion).

Conversion for CMC =  $25 / .960 = 26.0 \text{ µg/L}$

$WLA_a = 26 \text{ µg/L}$

$LTA_a = 26 \text{ µg/L} (0.321) = 8.3 \text{ µg/L}$  [CV = 0.6, 99<sup>th</sup> Percentile]

MDL = 8.3 µg/L (3.11) = 26 µg/L [CV = 0.6, 99<sup>th</sup> Percentile]

AML = 8.3 µg/L (1.55) = 13 µg/L [CV = 0.6, 95<sup>th</sup> Percentile, n = 4]

- **Iron, Total Recoverable.** There is no conversion factor from dissolved to total recoverable for Iron; therefore [10 CSR 20-7.031 Table A] is the criteria. No mixing allowed; therefore the criteria = the WLA. Protection of AQL criteria = 1000 µg/L.

$WLA = 1000 \text{ µg/L}$

$LTA_a = 1000 \text{ µg/L} (0.527) = 527 \text{ µg/L}$  [CV = 0.6, 99<sup>th</sup> Percentile]

MDL = 527 µg/L (3.11) = 1640 µg/L [CV = 0.6, 99<sup>th</sup> Percentile]

AML = 527 µg/L (1.55) = 816 µg/L [CV = 0.6, 95<sup>th</sup> Percentile, n = 4]

- **Lead, Total Recoverable.** The previous state operating permit for this facility required annual monitoring for this parameter. This metal has been detected in collected discharge samples at levels that would not violate water quality standards. Annual monitoring has been retained so at the next permit renewal it can be determined if the reasonable potential to violate water quality standards exists.
- **Magnesium.** The previous state operating permit for this facility required annual monitoring for this parameter. This metal has been detected in collected discharge samples at levels that would not cause adverse effects to aquatic life. Annual monitoring has been retained so at the next permit renewal it can be determined if the potential to adversely affect aquatic life exists.
- **Manganese.** The previous state operating permit for this facility required annual monitoring for this parameter. This metal has been detected in collected discharge samples at levels that would not violate water quality standards. Annual monitoring has been retained so at the next permit renewal it can be determined if the reasonable potential to violate water quality standards exists.
- **Selenium.** The previous state operating permit for this facility required annual monitoring for this parameter. This metal has been detected in collected discharge samples at levels that would not violate water quality standards. Annual monitoring has been retained so at the next permit renewal it can be determined if the reasonable potential to violate water quality standards exists.
- **Sodium.** The previous state operating permit for this facility required annual monitoring for this parameter. This metal has been detected in collected discharge samples at levels that would not cause adverse effects to aquatic life. Annual monitoring has been retained so at the next permit renewal it can be determined if the potential to adversely affect aquatic life exists.
- **Vanadium.** The previous state operating permit for this facility required annual monitoring for this parameter. This metal has been detected in collected discharge samples at levels that would not cause adverse effects to aquatic life. Annual monitoring has been retained so at the next permit renewal it can be determined if the potential to adversely affect aquatic life exists.

- **Zinc, Total Recoverable.** Protection of Aquatic Life Acute Criteria (CMC) = 205 µg/L. No mixing allowed; therefore, the CMC = the WLA (after conversion).

Conversion for CMC = 205/0.978 = 210 µg/L

WLA<sub>a</sub> = 210 µg/L

LTA<sub>a</sub> = 210 µg/L (0.321) = 67.41 µg/L

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

MDL = 67.41 µg/L (3.11) = 210 µg/L

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

AML = 67.41 µg/L (1.55) = 104 µg/L

[CV = 0.6, 95<sup>th</sup> Percentile, n = 4]

- **Minimum Sampling and Reporting Frequency Requirements.**

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
FLOW	ONCE/QUARTER	ONCE/QUARTER
RAINFALL	DAILY MEASUREMENT	DAILY MEASUREMENT
COD	ONCE/QUARTER	ONCE/QUARTER
BOD <sub>5</sub>	ONCE/QUARTER	ONCE/QUARTER
TSS	ONCE/QUARTER	ONCE/QUARTER
pH	ONCE/QUARTER	ONCE/QUARTER
SETTLABLE SOLIDS	ONCE/QUARTER	ONCE/QUARTER
TDS	ONCE/QUARTER	ONCE/QUARTER
CONDUCTIVITY	ONCE/QUARTER	ONCE/QUARTER
AMMONIA AS N	ONCE/QUARTER	ONCE/QUARTER
CHLORIDES	ONCE/QUARTER	ONCE/QUARTER
CHLORIDE PLUS SULFATES	ONCE/QUARTER	ONCE/QUARTER
IRON, TOTAL RECOVERABLE	ONCE/QUARTER	ONCE/QUARTER
COPPER, TOTAL RECOVERABLE	ONCE/QUARTER	ONCE/QUARTER
ZINC, TOTAL RECOVERABLE	ONCE/QUARTER	ONCE/QUARTER
TOTAL HARDNESS	ONCE/QUARTER	ONCE/QUARTER
CALCIUM	ONCE/YEAR	ONCE/YEAR
FLUORIDE	ONCE/YEAR	ONCE/YEAR
TOTAL ORGANIC CARBON	ONCE/YEAR	ONCE/YEAR
OIL & GREASE	ONCE/YEAR	ONCE/YEAR
NITRATE AS N	ONCE/YEAR	ONCE/YEAR
BENZENE	ONCE/YEAR	ONCE/YEAR
ETHYLBENZENE	ONCE/YEAR	ONCE/YEAR
TOLUENE	ONCE/YEAR	ONCE/YEAR
TOTAL XYLENE	ONCE/YEAR	ONCE/YEAR
ARSENIC, TOTAL RESIDUAL	ONCE/YEAR	ONCE/YEAR
BARIUM, TOTAL RESIDUAL	ONCE/YEAR	ONCE/YEAR
BORON, TOTAL RESIDUAL	ONCE/YEAR	ONCE/YEAR
CHROMIUM (III), TOTAL RECOVERABLE	ONCE/YEAR	ONCE/YEAR
CHROMIUM (VI), TOTAL RECOVERABLE	ONCE/YEAR	ONCE/YEAR
LEAD, TOTAL RECOVERABLE	ONCE/YEAR	ONCE/YEAR
MAGNESIUM, TOTAL RECOVERABLE	ONCE/YEAR	ONCE/YEAR
MANGANESE, TOTAL RECOVERABLE	ONCE/YEAR	ONCE/YEAR
SELENIUM, TOTAL RECOVERABLE	ONCE/YEAR	ONCE/YEAR
SODIUM, TOTAL RECOVERABLE	ONCE/YEAR	ONCE/YEAR
VANADIUM, TOTAL RECOVERABLE	ONCE/YEAR	ONCE/YEAR

***Outfall #004 Downstream Monitoring Point:***

Outfall #004 is a downstream monitoring only location. This location has been consistently sampled and reported on by this facility. The monitoring requirement has been added to this permit to ensure that the reported data will be recorded in the Water Quality Information System (WQIS) database. This will enable future determinations of stream impacts caused by Outfalls #005, #006, and #003. All parameters included in the other outfalls will be monitored at the same frequencies.

## **Part F – Administrative Requirements**

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

### **PUBLIC NOTICE:**

As per the Missouri Clean Water Law, the Missouri Clean Water Commission, and the federal Clean Water Act, persons wishing to comment on Missouri State Operating Permits are directed to do so by a department approved Public Notice coversheet. This Public Notice coversheet is attached to a Missouri State Operating Permit during the Public Notice period.

- The Public Notice period for this operating permit was from March 6, 2009 to April 8, 2009. No responses received or responses to the Public Notice of this operating permit do not warrant the modification of effluent limits and/or the terms and conditions of this permit.

**DATE OF FACT SHEET:** FEBRUARY 17, 2009

### **COMPLETED BY:**

**JIMMY COLES, ENVIRONMENTAL SPECIALIST  
KANSAS CITY REGIONAL OFFICE  
NPDES AND STORM WATER PERMITS UNIT  
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Modified by Jimmy Coles, April 12, 2012