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-0112721
Owner:	City of Hannibal
Address:	320 Broadway, Hannibal, MO 63401
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Hannibal Sanitary Landfill
Facility Address:	~ 2/3 mile south of Big Creek Lane & Kiowa Drive intersection, Hannibal, MO 63401
Legal Description:	SEE PAGE TWO
UTM Coordinates:	SEE PAGE TWO
Receiving Stream:	SEE PAGE TWO
First Classified Stream and ID:	SEE PAGE TWO
USGS Basin & Sub-watershed No.:	SEE PAGE TWO

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 TWO

Leachate cannot be discharged. Stormwater that comes 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.

October 28, 2011 — Effective Date
June 16, 2014 — Modification Date

Sara Parker Pauley, Director, Department of Natural Resources

October 27, 2016 — Expiration Date

John Madras, Director, Water Protection Program

FACILITY DESCRIPTION (continued)

Outfall #001 – Sanitary Landfill – SIC #4953
Stormwater runoff
Design Flow is 0.03 MGD
Actual Flow is dependent on rainfall

Legal Description:	NE ¼, SE ¼, SE ¼, Sec. 12, T56N, R6W, Ralls County
UTM Coordinates:	X=627741.378, Y=4390919.429
Receiving Stream:	Unnamed tributary to Big Creek (U)
First Classified Stream and ID:	Salt River (P) (00091) 303(d) List
USGS Basin & Sub-watershed No.:	(07110007-0302)

Outfall #002 – Sanitary Landfill – SIC #4953
Stormwater runoff
Design Flow is 0.03 MGD
Actual Flow is dependent on rainfall

Legal Description:	SW ¼, NE ¼, SW ¼, Sec. 7, T56N, R5W, Ralls County
UTM Coordinates:	X=628372.146, Y=4391154.380
Receiving Stream:	Unnamed tributary to Big Creek (U)
First Classified Stream and ID:	Salt River (P) (00091) 303(d) List
USGS Basin & Sub-watershed No.:	(07110007-0302)

Permitted Features #003 – No-Discharge Leachate Basin – leachate is hauled to a WWTP

Legal Description:	NE ¼, SE ¼, SE ¼, Sec. 12, T56N, R6W, Ralls County
UTM Coordinates:	X=627724.923, Y=4390965.258
Receiving Stream:	Unnamed tributary to Big Creek (U)
First Classified Stream and ID:	Salt River (P) (00091) 303(d) List
USGS Basin & Sub-watershed No.:	(07110007-0302)

Permitted Features #004 – No-Discharge Leachate Basin – leachate is hauled to a WWTP

Legal Description:	SW ¼, NE ¼, SW ¼, Sec. 7, T56N, R5W, Ralls County
UTM Coordinates:	X=628344.843, Y=4391173.422
Receiving Stream:	Unnamed tributary to Big Creek (U)
First Classified Stream and ID:	Salt River (P) (00091) 303(d) List
USGS Basin & Sub-watershed No.:	(07110007-0302)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until one (1) year after the effective date of this permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #001 & #002 – Notes 2 & 3						
Flow	MGD	*		*	once/quarter***	24 hr. estimate
Precipitation (Note 1)	Inches	*		*	once/day	measured
Chemical Oxygen Demand	mg/L	120		90	once/quarter***	grab
Biochemical Oxygen Demand$_5$	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
Oil & Grease	mg/L	15		10	once/quarter***	grab
Ammonia as N	mg/L	*		*	once/quarter***	grab
Nitrate as N	mg/L	*		*	once/quarter***	grab
Chloride + Sulfate	mg/L	1000		*	once/quarter***	grab
Chloride	mg/L	*		*	once/quarter***	grab
Sulfate	mg/L	*		*	once/quarter***	grab
Fluoride	mg/L	*		*	once/quarter***	grab
Benzene	µg/L	*		*	once/quarter***	grab
Ethylbenzene	µg/L	*		*	once/quarter***	grab
Toluene	µg/L	*		*	once/quarter***	grab
Total Xylene	µg/L	*		*	once/quarter***	grab

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

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.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until one (1) year after the effective date of this permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #001 & #002 – Notes 2 & 3						
Total Hardness	mg/L	*		*	once/quarter***	grab
Aluminum, Total Recoverable	µg/L	*		*	once/quarter***	grab
Antimony, Total Recoverable	µg/L	*		*	once/quarter***	grab
Arsenic, Total Recoverable	µg/L	*		*	once/quarter***	grab
Barium, Total Recoverable	µg/L	*		*	once/quarter***	grab
Beryllium, Total Recoverable	µg/L	*		*	once/quarter***	grab
Boron, Total Recoverable	µg/L	*		*	once/quarter***	grab
Cadmium, Total Recoverable	µg/L	*		*	once/quarter***	grab
Chromium (III), Total Recoverable	µg/L	*		*	once/quarter***	grab
Chromium (VI), Dissolved	µg/L	*		*	once/quarter***	grab
Cobalt, Total Recoverable	µg/L	*		*	once/quarter***	grab
Copper, Total Recoverable	µg/L	*		*	once/quarter***	grab
Iron, Total Recoverable	µg/L	*		*	once/quarter***	grab
Lead, Total Recoverable	µg/L	*		*	once/quarter***	grab
Manganese, Total Recoverable	µg/L	*		*	once/quarter***	grab
Mercury, Total Recoverable	µg/L	*		*	once/quarter***	grab
Nickel, Total Recoverable	µg/L	*		*	once/quarter***	grab
Selenium, Total Recoverable	µg/L	*		*	once/quarter***	grab
Silver, Total Recoverable	µg/L	*		*	once/quarter***	grab
Thallium, Total Recoverable	µg/L	*		*	once/quarter***	grab
Zinc, Total Recoverable	µg/L	*		*	once/quarter***	grab

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

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.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective one (1) year after the effective date of this 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
Outfalls #001 & #002 – Notes 2 & 3						
Flow	MGD	*		*	once/quarter***	24 hr. estimate
Precipitation (Note 1)	Inches	*		*	once/day	measured
Chemical Oxygen Demand	mg/L	90		60	once/quarter***	grab
Biochemical Oxygen Demand$_5$	mg/L	45		30	once/quarter***	grab
Total Suspended Solids	mg/L	80		50	once/quarter***	grab
pH	SU	**		**	once/quarter***	grab
Settleable Solids	mL/L/hr	1.5		1.0	once/quarter***	grab
Oil & Grease	mg/L	15		10	once/quarter***	grab
Ammonia as N	mg/L	*		*	once/quarter***	grab
Nitrate as N	mg/L	*		*	once/quarter***	grab
Chloride + Sulfate	mg/L	1000		*	once/quarter***	grab
Chloride	mg/L	*		*	once/quarter***	grab
Sulfate	mg/L	*		*	once/quarter***	grab
Fluoride	mg/L	*		*	once/quarter***	grab
Benzene	µg/L	*		*	once/quarter***	grab
Ethylbenzene	µg/L	*		*	once/quarter***	grab
Toluene	µg/L	*		*	once/quarter***	grab
Total Xylene	µg/L	*		*	once/quarter***	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JANUARY 28, 2013. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

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.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective one (1) year after the effective date of this 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
Outfalls #001 & #002 – Notes 2 & 3						
Total Hardness	mg/L	*		*	once/quarter***	grab
Aluminum, Total Recoverable	µg/L	*		*	once/quarter***	grab
Antimony, Total Recoverable	µg/L	*		*	once/quarter***	grab
Arsenic, Total Recoverable	µg/L	*		*	once/quarter***	grab
Barium, Total Recoverable	µg/L	*		*	once/quarter***	grab
Beryllium, Total Recoverable	µg/L	*		*	once/quarter***	grab
Boron, Total Recoverable	µg/L	*		*	once/quarter***	grab
Cadmium, Total Recoverable	µg/L	*		*	once/quarter***	grab
Chromium (III), Total Recoverable	µg/L	*		*	once/quarter***	grab
Chromium (VI), Dissolved	µg/L	*		*	once/quarter***	grab
Cobalt, Total Recoverable	µg/L	*		*	once/quarter***	grab
Copper, Total Recoverable	µg/L	*		*	once/quarter***	grab
Iron, Total Recoverable	µg/L	1642.7		818.8	once/quarter***	grab
Lead, Total Recoverable	µg/L	*		*	once/quarter***	grab
Manganese, Total Recoverable	µg/L	*		*	once/quarter***	grab
Mercury, Total Recoverable	µg/L	*		*	once/quarter***	grab
Nickel, Total Recoverable	µg/L	*		*	once/quarter***	grab
Selenium, Total Recoverable	µg/L	*		*	once/quarter***	grab
Silver, Total Recoverable	µg/L	*		*	once/quarter***	grab
Thallium, Total Recoverable	µg/L	*		*	once/quarter***	grab
Zinc, Total Recoverable	µg/L	*		*	once/quarter***	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JANUARY 28, 2013. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

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.

A. LEACHATE BASIN MONITORING REQUIREMENTS

The storage of leachate shall be monitored by the permittee as specified below:

OUTFALL NUMBER	UNITS	FINAL LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Permitted Features #003 and #004 – Leachate Basin Operational Monitoring (Note 3)						
Basin Freeboard (Note 4)	feet	*			twice/month	measured

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

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 August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

* Monitoring requirement only.
** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.
*** See table below for quarterly sampling

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 (continued)

Note 1 – Precipitation data can be submitted as one report for all outfalls.

Note 2 – During the first precipitation event that causes runoff to occur onsite, a representative grab sample shall be collected. Grab samples shall be taken 10 to 60 minutes after the stormwater discharge begins. Only one sample is required per quarter.

Note 3 - Records shall be maintained and summarized into an annual operating report, which shall be submitted by January 28th of each year for the previous calendar year period using report forms approved by the Department. The summarized annual report is in addition to the reporting requirements listed in Table A. The summarized annual report shall include the following:

a. Record of maintenance and repairs performed during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year;
b. The number of days the basins discharged during the year, the discharge flow, and the reasons discharge occurred;
c. Record of dates and quantities of leachate removed from storage basins.

Note 4 - Lagoon freeboard shall be reported as lagoon water level in feet below the overflow level.

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.

C. SPECIAL CONDITIONS (continued)

2. Outfalls must be clearly marked in 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.

(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:

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) 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 twice per month site inspections 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. SPECIAL CONDITIONS (continued)

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

11. Stormwater that comes 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).

12. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8.

13. Any pesticide discharge from any point source shall comply with the requirements of Federal Insecticide, Fungicide and Rodenticide Act, as amended (7 U.S.C. 136 et. seq.) and the use of such pesticides shall be in a manner consistent with its label.

14. In accordance with, and in addition to, Standard Conditions Part I, the permittee is to notify the department by telephone within 24 hours of becoming aware of any event that may endanger health or the environment. Leaving a message on a department staff member's voicemail does not satisfy this reporting requirement. During holidays, during the weekends, after normal business hours, or if the permit holder cannot reach regional office staff for any reason, the permit holder is instructed to report the situation to the department's 24 hour Environmental Emergency Response hotline at (573) 634-2436. In addition, the permittee shall submit to the department a written report with five (5) days of the time the permittee becomes aware of the circumstances. The written report shall include a description of the discharge or situation and cause of any noncompliance, the period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent `recurrence of the non-complying discharge. These events include but are not limited to (a) any spill, of any material, that leaves the property of the facility and (b) any spill, of any material outside of secondary containment and exposed to precipitation, greater than 25 gallons or an equivalent volume of solid material.

Federal Regulations (CERCLA) require 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.

C. SPECIAL CONDITIONS (continued)

15. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards. A method is "sufficiently sensitive" when (1) the method quantitation level is at or below the level of the applicable water quality criterion for the pollutant or (2) the method quantitation level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough that the method detects and quantifies the level of pollutant in the discharge. These methods are even required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established.

D. SCHEDULE OF COMPLIANCE

Effluent Limitations

1. The Final Effluent Limitations shall be met by **October 28, 2012**.

2. If the permittee determines that the new effluent limitations will not or can not be met by **October 28, 2012**, then the permittee shall submit a Compliance Report to the Northeast Regional Office by **September 28, 2012** for review. The Compliance Report shall include the following:

   (a) Reason(s) that the new effluent limitation will not or can not be met for each specific pollutant.
   (b) Steps taken or planned to be taken by the permittee to met the new effluent limitations for each specific pollutant.
   (c) A compliance schedule to be implemented by the permittee to meet the new effluent limitation for each specific pollutant.

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 event that causes runoff to occur onsite, 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. This permit authorizes only the activities described in this permit.

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-0112721
HANNIBAL 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.

July 2014 Modification
One table was mistakenly omitted from the modified permit (final effluent limitations on page 6 of 11). This version is being issued to correct this typo.

June 16, 2014 Modification
In May of 2014, the Department initiated an internal modification of this permit in order to remove all limitations and requirements from the permit concerning land application. Land application guidelines were also eliminated from the following Fact Sheet. Land application requirements for leachate were mistakenly included during the 2011 renewal. This facility did not have approval from the Solid Waste Management Program to land apply leachate. Including those requirements in this permit created confusion about facility operations. The facility submitted a SWPPP dated May 1, 2014 to the Department. The updated Leachate Management Plan was included in Attachment C. This document states:

"The City then reviewed 3 options for a proposed leachate management plan. The increased volume of leachate made land application extremely sensitive to weather, time consuming, and required additional storage to get through the winter months when typically frozen or saturated soils prohibit land application of the leachate. Due to the cost of these capital improvements, and after review of the leachate lab results by the Board of Public Works (BPW), The City of Hannibal has elected to purchase a tanker truck and to haul the leachate to the Hannibal Waste Water Treatment Plant (WWTP)."

Based on this new information the Water Protection Program determined that land application of leachate should be removed from the 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:

The Hannibal Sanitary Landfill was first issued a solid waste permit on January 20, 1975. This site consisted of approximately 80 acres, of which approximately eight acres was later designed for use as a permitted sanitary landfill. The existing portion of the 80 acre tract was being used for the disposal of solid waste prior to the Missouri Solid Waste Management Law coming into effect. That portion of the site was closed in accordance with approved engineering plans submitted by the City of Hannibal beginning in 1975. This portion of the landfill is located in the SW ¼, SW ¼, of Section 7, Township 56N, Range 5 West and the SE ¼, SE ¼ of Section 12, Township 56, Range 6 West, in Ralls County. This site was later permitted as a 13.25 acre site, with an estimated nine acres used for actual disposal of waste by using the trench method. This section of the landfill is located on the west side of the entrance road to the property. The City of Hannibal ceased accepting waste at this site in 1979. Storm water, from this portion of the landfill, discharges from the property through Outfall #002.

Phase II was the second permitted disposal site used by the City of Hannibal with a permit being issued by the Department on January 24, 1980. The site consisted of 10 acres, of which two acres was permitted for use at the time. The third and final site used by the City of Hannibal was issued a permit by the Department on February 9, 1981. The site was originally permitted as 17.79 acres, of which an estimated 14.29 acres was used for the placement of waste. The City of Hannibal ceased accepting waste at this site in 1993. Thereafter, the City of Hannibal constructed leachate collection systems, leachate holding basins, and an irrigation system for the management of leachate from both permitted sites. This portion of the landfill is located in the SW ¼, NW ¼, Section 7, Township 56 North, Range 5 West, in Ralls County. Storm water, from this portion of the landfill, discharges from the property through Outfall #001.

The City of Hannibal received final closure for both permitted sites by the Missouri Department of Natural Resources' Solid Waste Management Program on September 17, 1998.

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	~ 5.08
002	Variable	BMP*	Industrial – Storm water runoff	~ 4.92

* - BMP means Best Management Practices

Outfall #001
NE ¼, SE ¼, SE ¼, Sec. 12, T56N, R6W, Ralls County
UTM Coordinates: X=627741.378, Y=4390919.429

Outfall #002
SW ¼, NE ¼, SW ¼, Sec. 7, T56N, R5W, Ralls County
UTM Coordinates: X=628372.146, Y=4391154.380

Permitted Features #003 - Leachate Basin

Legal Description: NE ¼, SE ¼, SE ¼, Sec. 12, T56N, R6W, Ralls County
UTM Coordinates: X=627724.923, Y=4390965.258

Permitted Features #004 - Leachate Basin

Legal Description: SW ¼, NE ¼, SW ¼, Sec. 7, T56N, R5W, Ralls County
UTM Coordinates: X=628344.843, Y=4391173.422

Outfalls #001 & #002, Permitted Features #003 & #004
First receiving stream: Unnamed tributary to Big Creek (U)
1st Class: Salt River (P) (00091) 303(d) List
HUC 14: (07110007-020003)
EDU: Central Plains/Cuivre/Salt

Water Quality History:
An inspection was conducted at the facility on November 3, 2009. At the time of the inspection, a discharge was observed flowing over the top of the berm on the south side of the west basin. The inspector observed the stream located immediately downstream of the west basin. The water in the stream was slightly turbid immediately downstream of the discharge from the leachate basin. The water in the stream upstream of the discharge from the leachate basin was also turbid. The east leachate basin was observed to have no freeboard between the water level and the top of the berm.

Comments:
The facility has two leachate basins. Prior to 2014, the leachate basins were periodically irrigated by electric motor driven pumps at each holding basin site complete with adjustable run timers. This facility is no longer authorized to land apply leachate.

Prior to 2014, Land application was accomplished by the use of portable aluminum irrigation pipe. The pipe was laid across the top surface of the landfill and moved as conditions warranted. The pipe had tapped openings where 5' high sprinkler risers with impact-type sprinkler heads. Application rates listed in the Operating Report for the facility dated November 1995, were not to exceed 24-inches per year, 0.1 inches per hour, 1-inch of water per day, and 3-inches of water per week.

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 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*	8-DIGIT HUC	EDU**
Unnamed tributary to Big Creek	U	NA	General Criteria	07110007	Central Plains/Cuivre/Salt
Salt River	P	00091	IRR, LWW, AQL, WBC-A***, SCR, DWS		

* - 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 has not been conducted.

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.

☒ - Renewal no degradation proposed and no further review necessary.

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.

Applicable ☒; The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations where established in accordance with [10 CSR 20-7.031(10)]. A Schedule of Compliance is included for the facility to meet Final Effluent Limitations for Chemical Oxygen Demand, Biochemical Oxygen Demand$_5$, Total Suspended Solids, and Iron, Total Recoverable.

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 *Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* [EPA 832-R-92-006] (Storm Water Management), 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.

WLA MODELING:

Not Applicable ☒; A WLA study was either not submitted or determined not applicable by department staff.

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

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

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

Applicable ☒; Salt River is listed on the 2008 Missouri 303(d) List for Low Dissolved Oxygen and Mercury.

☒ – This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment of Salt River.

Part E – Effluent Limits Determination

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 supercedes the terms and conditions, including effluent limitations, of this operating permit.

Outfalls #001 & #002 - Interim

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
Flow	gpd	1	*		*	NO	S
Precipitation	Inches	9	*		*	NO	S
COD	mg/L	9	120		90	NO	S
BOD_5	mg/L	1/9	60		45	NO	S
TSS	mg/L	1	80		60	NO	S
pH	SU	1	6.5 – 9.0		6.5 – 9.0	NO	S
Settleable Solids	mL/L/hr	1/9	1.5		1.0	NO	S
Oil & Grease	mg/L	1/2/9	15		10	NO	S
Ammonia as N	mg/L	1/2/5/9	*		*	NO	S
Nitrate as N	mg/L	1/2/9	*		*	YES	**
Chloride + Sulfates	mg/L	1/2/9	1000		*	NO	S
Chloride	mg/L	1/2/9	*		*	YES	**
Sulfate	mg/L	1/2/9	*		*	YES	**
Fluoride	mg/L	1/2/9	*		*	NO	S
Benzene	µg/L	1/2/9	*		*	YES	BETX 0.75
Ethylbenzene	µg/L	1/2/9	*		*	YES	BETX 0.75
Toluene	mg/L	1/2/9	*		*	YES	BETX 0.75
Total Xylene	mg/L	1/2/9	*		*	YES	BETX 0.75
Total hardness	mg/L	9	*		*	NO	S
Aluminum, TR	mg/L	1/2/9	*		*	YES	**
Antimony, TR	mg/L	1/2/9	*		*	NO	S
Arsenic, TR	µg/L	1/2/9	*		*	NO	S
Barium, TR	µg/L	1/2/9	*		*	NO	S
Beryllium, TR	µg/L	1/2/9	*		*	NO	S
Boron, TR	µg/L	1/2/9	*		*	NO	S
Cadmium, TR	µg/L	1/2/9	*		*	NO	S
Chromium (III), TR	µg/L	1/2/9	*		*	YES	CHROMIUM, TR
Chromium (VI), Dissolved	µg/L	1/2/9	*		*	YES	CHROMIUM, TR
Cobalt, TR	µg/L	1/2/9	*		*	NO	S
Copper, TR	µg/L	1/2/9	*		*	NO	S
Iron, TR	µg/L	1/2/9	*		*	NO	S
Lead, TR	µg/L	1/2/9	*		*	NO	S
Manganese, TR	µg/L	1/2/9	*		*	NO	S
Mercury, TR	µg/L	1/2/9	*		*	NO	S
Nickel, TR	µg/L	1/2/9	*		*	NO	S
Selenium, TR	µg/L	1/2/9	*		*	NO	S
Silver, TR	µg/L	1/2/9	*		*	NO	S
Thallium, TR	µg/L	1/2/9	*		*	NO	S
Zinc, TR	µg/L	1/2/9	*		*	NO	S
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

Outfalls #001 & #002 – Final Effluent Limitation

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
Flow	gpd	1	*		*	NO	S
Precipitation	Inches	9	*		*	NO	S
COD	mg/L	9	90		60	YES	120/90
BOD_5	mg/L	1/9	45		30	NO	60/45
TSS	mg/L	1	80		50	YES	80/60
pH	SU	1	6.5 – 9.0		6.5 – 9.0	NO	S
Settleable Solids	mL/L/hr	1/9	1.5		1.0	NO	S
Oil & Grease	mg/L	1/2/9	15		10	NO	S
Ammonia as N	mg/L	1/2/5/9	*		*	NO	S
Nitrate as N	mg/L	1/2/9	*		*	NO	S
Chloride + Sulfates	mg/L	1/2/9	1000		*	NO	S
Chloride	mg/L	1/2/9	*		*	NO	S
Sulfate	mg/L	1/2/9	*		*	NO	S
Fluoride	mg/L	1/2/9	*		*	NO	S
Benzene	µg/L	1/2/9	*		*	NO	S
Ethylbenzene	µg/L	1/2/9	*		*	NO	S
Toluene	mg/L	1/2/9	*		*	NO	S
Total Xylene	mg/L	1/2/9	*		*	NO	S
Total hardness	mg/L	9	*		*	NO	S
Aluminum, TR	mg/L	1/2/9	*		*	NO	S
Antimony, TR	mg/L	1/2/9	*		*	NO	S
Arsenic, TR	µg/L	1/2/9	*		*	NO	S
Barium, TR	µg/L	1/2/9	*		*	NO	S
Beryllium, TR	µg/L	1/2/9	*		*	NO	S
Boron, TR	µg/L	1/2/9	*		*	NO	S
Cadmium, TR	µg/L	1/2/9	*		*	NO	S
Chromium (III), TR	µg/L	1/2/9	*		*	NO	S
Chromium (VI), Dissolved	µg/L	1/2/9	*		*	NO	S
Cobalt, TR	µg/L	1/2/9	*		*	NO	S
Copper, TR	µg/L	1/2/9	*		*	NO	S
Iron, TR	µg/L	1/2/9	1642.7		818.8	YES	*
Lead, TR	µg/L	1/2/9	*		*	NO	S
Manganese, TR	µg/L	1/2/9	*		*	NO	S
Mercury, TR	µg/L	1/2/9	*		*	NO	S
Nickel, TR	µg/L	1/2/9	*		*	NO	S
Selenium, TR	µg/L	1/2/9	*		*	NO	S
Silver, TR	µg/L	1/2/9	*		*	NO	S
Thallium, TR	µg/L	1/2/9	*		*	NO	S
Zinc, TR	µg/L	1/2/9	*		*	NO	S
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
S – Same as previous operating permit

Basis for Limitations Codes:

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

OUTFALLS #001 & #002 – 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.

- **Precipitation.** 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).** Final 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_5).** Final Effluent limitations of 45 mg/L as a Daily Maximum and 30 mg/L as a Monthly Average are applicable to this facility and are consistent with other landfill operating permits.

- **Total Suspended Solids (TSS).** Effluent limitations of 80 mg/L as a Daily Maximum and 50 mg/L as a Monthly Average are applicable to this facility and are consistent with other landfill operating permits.

- **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.

- **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.

- **Nitrate as N**. Monitoring only requirement.

- **Chlorides + Sulfate**. Effluent limitation of 1000 mg/L as a Daily Maximum is applicable as per [10 CSR 20-7.031(L)1.].

- **Chlorides**. Monitoring only requirement.

- **Sulfate**. Monitoring only requirement.

- **Fluoride**. Monitoring only requirement.

- **Benzene**. Monitoring only requirement.

- **Ethylbenzene**. Monitoring only requirement.

- **Toluene.** Monitoring only requirement.

- **Total Xylene.** Monitoring only requirement.

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
Arsenic	1.0
Cadmium	0.916
Chromium III	0.316
Chromium VI	0.982
Copper	0.960
Lead	0.695
Mercury	0.85
Nickel	0.998
Silver	0.85
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.

- **Aluminum, Total Recoverable**. Monitoring requirement only. This parameter needs monitoring to determine if it has potential to violate Missouri's WQS.

- **Antimony, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Arsenic, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Barium, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Beryllium, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Boron, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Cadmium, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Chromium (III), Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Chromium (VI), Dissolved**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Cobalt, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Copper, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Iron, Total Recoverable**. Iron does not have an acute criteria at this time; therefore, the Protection of Aquatic Life Chronic Criteria (CCC) of 1000 µg/L is applicable. No mixing allowed; therefore, the CCC = the WLA.

  WLA_c = 1000 µg/L
  LTA_c = 1000 µg/L (0.5274) = 527.4 µg/L [CV = 0.6, 99th Percentile]

  MDL = 527.4 µg/L (3.115) = **1642.7** µg/L [CV = 0.6, 99th Percentile]
  AML = 527.4 µg/L (1.552) = **818.8** µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Lead, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Manganese, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Mercury, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Nickel, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Selenium, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Silver, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Thallium, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

- **Zinc, Total Recoverable**. Monitoring requirement only. This parameter needs further monitoring to determine if it has potential to violate Missouri's WQS.

Test procedures for the analysis of pollutants shall be in accordance with the references methods listed in Missouri Clean Water Commission Effluent Regulation 10 CSR 20-7015(9)(A) 2. unless alternates are approved by the Department. The facility shall ensure that the testing lab uses an approved test method with a detection limit below water quality criteria for any sampling conducted, even for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established.

Part E – Effluent Limits Determination

Permitted Features #003 & #004 – Leachate Basin Monitoring Requirements – this permit does not authorize land application of leachate.

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
Leachate Basins Operational Monitoring							
Lagoon Freeboard	feet	9	*			YES	**

* - Monitoring requirement only
** - Parameter not previously established in previous state operating permit.
N/A – Not applicable
S – Same as previous operating permit

Basis for Limitations Codes:

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

- **Leachate Basins Freeboard**. Monitoring requirement only. This permit does not authorize leachate discharge.

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 is tentatively schedule to begin on September 2, 2011 or is in process.

☐ - The Public Notice period for this operating permit was from (DATE) to (DATE). Responses to the Public Notice of this operating permit warrant the modification of effluent limits and/or the terms and conditions of this permit. (Please explain). (Also if applicable – Due to the major modifications of this permit, this operating permit is to be placed on Public Notice again, which is tentatively scheduled to begin on (DATE) or is in process.

☐ - The Public Notice period for this operating permit was from (DATE) to (DATE). 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: JUNE 6, 2011

COMPLETED BY:

Brant Farris, Environmental Specialist
Northeast Regional Office
(660) 385-8000
brant.farris@dnr.mo.gov

Joe Bowdish, Environmental Specialist
Northeast Regional Office
(660) 385-8000
joe.bowdish@dnr.mo.gov

DATE OF FACT SHEET: MAY 7, 2014

MODIFIED BY:

AMANDA SAPPINGON
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
(573) 751-8728
Amanda.sappington@dnr.mo.gov