

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-0101087

Owner: Little Blue Valley Sewer District (LBVSD)
Address: 21101 E. State Route 78, Independence, MO 64057-2767

Continuing Authority: Same as above
Address: Same as above

Facility Name: LBVSD, Atherton Plant
Facility Address: 21208 East Old Atherton Rd., Independence, MO 64058

Legal Description: See page two (2)
Latitude/Longitude: See page two (2)

Receiving Stream: See page two (2)
First Classified Stream and ID: See page two (2)
USGS Basin & Sub-watershed No.: See page two (2)

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

FACILITY DESCRIPTION

See page two (2)

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

July 28, 2010
Effective Date


Mark N. Templeton, Director, Department of Natural Resources

July 27, 2015
Expiration Date


Scott B. Totten, Acting Director Water Protection Program

FACILITY DESCRIPTION (continued)

Outfall #001 - POTW - SIC #4952 - Class "A" Operator Required

Four (4) primary clarifiers/ two (2) aeration basins with anoxic selector zones/ two (2) aeration basins, and five (5) final clarifiers. Sludge disposal is either incinerated with ash going to landfill and/or dewatered sludge going to landfill.

Design population equivalent is 400,000.

Design flow is 52 MGD.

Actual flow is 40.03 MGD.

Design sludge production is 8,135 dry tons/year.

Actual sludge production is 6,818 dry tons/year.

Legal Description:	SW ¼, NE ¼, Sec. 4, T50N, R31W, Jackson County
UTM Coordinates:	X = 384919, Y = 4337733
Receiving Stream:	Missouri River (P)
First Classified Stream and ID:	Missouri River (P) (00356)
USGS Basin & Sub-watershed No.:	(10300101-050004)

Flows between 0 and 150 MGD

The facility will utilize the following flow sequence:

Four primary clarifiers, two aeration basins with anoxic selector zones and five final clarifiers. Flows that are diverted from the facility's Secondary Treatment units are subject to 40 C.F.R. 122.41 (m).

Flows over 150 and up to 350 MGD

The facility will utilize the following flow sequence:

Influent pumping, Preliminary Treatment, four (4) primary clarifiers with chemically enhanced settling utilizing polymers and ferric salts serving as auxiliary treatment to a maximum flow of 200 MGD; and 150 MGD diverted to two (2) secondary biological aeration basins followed by five (5) final clarifiers. Flows of 150 MGD biologically treated effluent from the five (5) final clarifiers and 200 MGD chemically enhanced primary clarified effluent from the four (4) primary clarifiers serving as auxiliary treatment are mixed prior to discharge through Outfall #001.

Flows over 350 MGD and up to 400 MGD

The facility will utilize the following flow sequence:

Influent Pumping, Preliminary Treatment, four (4) primary clarifiers with chemically enhanced settling utilizing polymers and ferric salts to a maximum flow of 200 MGD; 150 diverted to two (2) secondary biological aeration basins followed by five (5) final clarifiers; and 50 MGD diverted to the Peak Flow Clarifier. Flows of 150 MGD biologically treated wastewater from the five (5) final clarifiers and 200 MGD chemically enhanced primary clarified effluent from the four (4) primary clarifiers and 50 MGD settled wastewater from the Peak Flow Clarifier are mixed prior to discharge through Outfall #001.

Outfall #002 - Eliminated, no exposure.

Outfall #003 - Eliminated, no exposure.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 3 of 12	
					PERMIT NUMBER MO-0101087	
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 December 30, 2013. 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
<u>Outfall #001</u> Escherichia coli (Note 1)	#/100 mL	*		*	Once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>August 28, 2010</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
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 on December 31, 2013, and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u> Escherichia coli (Note 1)	#/100 mL	*		206	Once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>February 28, 2010</u> . 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 <u>Parts I, II, & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 4 of 12	
					PERMIT NUMBER MO-0101087	
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 three (3) years 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
<u>Outfall #001</u>						
Flow	MGD	*		*	Once/day	24 hr. total
Biochemical Oxygen Demand ₅	mg/L		45	30	Once/weekday	24 hr. composite
Total Suspended Solids	mg/L		45	30	Once/weekday	24 hr. composite
pH – Units	SU	**		**	Once/weekday	grab
Temperature	°C	*		*	Once/weekday	grab
Ammonia as N (May 1 – Oct 31)	mg/L	*		*	Once/weekday	grab
(Nov 1 – April 30)		*		*	Once/weekday	grab
Oil & Grease	mg/L	15		10	Once/month	grab
Cyanide, Amenable to Chlorination	mg/L	*		*	Once/month	24 hr. composite
Arsenic, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Antimony, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Cadmium, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Chromium (III), Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Chromium (VI), Total Dissolved	mg/L	*		*	Once/month	grab
Copper, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Lead, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Mercury, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Nickel, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Silver, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Zinc, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>August 28, 2010</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity (WET) test	% Survival	See Special Conditions #10.		Once/year	24 hr. composite	
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>August 28, 2010</u> .						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	PAGE NUMBER 5 of 12
	PERMIT NUMBER MO-0101087

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 three (3) years from the date of issuance of this permit and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	Once/day	24 hr. total
Biochemical Oxygen Demand ₅	mg/L		45	30	Once/weekday	24 hr. composite
Total Suspended Solids	mg/L		45	30	Once/weekday	24 hr. composite
pH – Units	SU	**		**	Once/weekday	grab
Temperature	°C	*		*	Once/weekday	grab
Ammonia as N (May 1 – Oct 31)	mg/L	47.3		18.1	Once/weekday	grab
(Nov 1 – April 30)		47.3		18.1	Once/weekday	grab
Oil & Grease	mg/L	15		10	Once/month	grab
Cyanide, Amenable to Chlorination	mg/L	*		*	Once/month	24 hr. composite
Arsenic, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Antimony, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Cadmium, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Chromium (III), Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Chromium (VI), Total Dissolved	mg/L	*		*	Once/month	grab
Copper, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Lead, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Mercury, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Nickel, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Silver, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite
Zinc, Total Recoverable	mg/L	*		*	Once/month	24 hr. composite

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

Whole Effluent Toxicity (WET) test	% Survival	See Special Conditions #10.	Once/year	24 hr. composite
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MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE August 28, 2013.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II, & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.

Note 1 - Final limitations and monitoring requirements for Escherichia coli is applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for Escherichia coli is expressed as a geometric mean. Numeric Effluent Limitations are based on the proposed rule for *E. Coli* published November 2, 2009 in the Missouri Register, Volume 34, Number 21.

C. INFLUENT MONITORING REQUIREMENTS		PERMIT NUMBER MO-0101087	
The facility is required to meet a removal efficiency of 85% or more. The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:			
SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Influent</u>			
Biochemical Oxygen Demand ₅	mg/L	Once/month	24 hr. composite
Total Suspended Solids	mg/L	Once/month	24 hr. composite

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE August 28, 2010.

D. 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.

D. SPECIAL CONDITIONS (continued)

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 comply with any applicable requirements listed in 10 CSR 20-8 and 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.
7. The permittee shall develop and implement a program for maintenance and repair of the LBVSD's interceptor conveyance system. The permittee shall submit a report annually in November to the Kansas City Regional Office with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the LBVSD's interceptor conveyance system serving the facility.
8. Permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 40 CFR Part 403. The approved pretreatment program is hereby incorporated by reference.
9. Permittee shall submit to the Department on or before March 31st of each year a report briefly describing its pretreatment activities during the previous calendar year. At a minimum, the report shall include the following:
 - (a) An updated list of the Permittee's Industrial Users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Permittee shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The Permittee shall also list the Industrial Users that are subject only to local Requirements;
 - (b) A summary of the status of Industrial User compliance over the reporting period;
 - (c) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and
 - (d) Any other relevant information requested by the Department.

D. SPECIAL CONDITIONS (continued)

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

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT					
OUTFALL	AEC	LC50%*	FREQUENCY	SAMPLE TYPE	MONTH
001	21%	70%	Annually	24 hr. Composite	Sample any month, report in August

* LC50 = AEC / 0.3.

Dilution Series						
84%	42%	21%	10.5%	5.25%	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
 - (a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
 - (b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
 - (c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
 - (d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.
 - (e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.
 - (f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.
 - (h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.
 - (i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
 - (j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.
 - (k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.
 - (l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.
- (2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.

D. SPECIAL CONDITIONS (continued)

10. WET Test (continued):

- (3) If the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met:
 - (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
 - (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (4) Failure of at WET tests is a violation of this permit.
- (5) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
- (6) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
- (7) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
- (8) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
- (9) Submit a concise summary in tabular format of all WET test results with the annual report.

(b) PASS/FAIL procedure and effluent limitations:

- (1) To pass a multiple-dilution test:
 - (a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC) OF 30% OR LESS, the AEC must be less than three-tenths (0.3) of the LC₅₀ concentration for the most sensitive of the test organisms; **OR**,
 - (b) For facilities with an AEC greater than 30%, the LC₅₀ concentration must be greater than 100%; **AND**,
 - (c) All effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required. Failure of one multiple-dilution test may be considered an effluent limit violation.

(c) Test Conditions

- (1) Test Type: Acute Static non-renewal
- (2) All tests, including repeat tests for previous failures, shall include both test species listed below.
- (3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
- (4) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.
- (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
- (6) Multiple-dilution tests will be run with:
 - (a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;

D. SPECIAL CONDITIONS (continued)

10. WET Test (continued):

- (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
 - (c) Reconstituted water.
- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
- (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

SUMMARY OF TEST METHODOLOGY FOR WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test acceptability criterion:	90% or greater survival in controls

Test conditions for (Pimephales promelas):

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test Acceptability criterion:	90% or greater survival in controls

E. SCHEDULE OF COMPLIANCE

Disinfection

The final shall become effective on December 31, 2013, or as soon as possible, in accordance with the conditions below.

1. Within one (1) year from the issuance of this operating permit, the permittee shall submit an interim progress report on steps taken to meet the December 31, 2013, disinfection milestone.
2. The permittee shall submit a complete construction permit application on or before September 1, 2011.
3. The permittee shall submit a progress report on the 2nd anniversary of the issuance date of this operating permit on steps taken to meet the December 31, 2013, disinfection milestone.
4. The permittee shall submit a progress report on the 3rd anniversary of the issuance date of this operating permit on steps taken to meet the December 31, 2013, disinfection milestone.
5. If the permittee believes they will fail to meet any of the interim dates above, the permittee shall notify the Department in writing of the reason for non compliance no later than 14 days following each interim date.
6. Upon completion of construction, the permittee submit a Statement of Work complete and signed by the owner and licensed professional engineer in the state of Missouri.

Ammonia

The final shall become effective within three (3) years of the effective date of this operating permit or as soon as possible in accordance with the conditions below, or on December 31, 2013, whichever comes first. The permittee shall submit annual reports to the Department on steps taken to implement Table A – Final Effluent Limitations for Total Ammonia as Nitrogen. The annual reports are due for the first and second anniversary of the effective date of this operating permit. Meaning if this operating permit was issued on May 5, 2010, then the annual reports would be due on May 5, 2011 and May 5, 2012.

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0101087
LITTLE BLUE VALLEY SEWER DISTRICT, ATHERTON PLANT

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

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

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

This Factsheet is for a Major , Minor , Industrial Facility ; Variance ;
 Master General Permit ; General Permit Covered Facility ; and/or permit with widespread public interest .

Part I – Facility Information

Facility Type: POTW
 Facility SIC Code(s): 4952

Facility Description:

This facility has an average daily design flow of 52 MGD and an Actual flow of 40.03 MGD (per the DMRs). The facility consist of screening, grit removal, and lift station at the headworks building. The facility consist of one (1) peak flow clarifier, four (4) primary clarifiers, two (2) aeration basins with anoxic selector zones, two (2) aeration basins, and five (5) final clarifiers.

The sludge handling process will consist of incineration with ash to the going to landfill and/or dewatered sludge going to the landfill.

Application Date: September 24, 2007
 Expiration Date: March 30, 2008

Last Inspection: August 10, 2006 In Compliance ; Non-Compliance

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	80.6	Secondary	Domestic – Municipal	0.0
002	Outfall has been removed, please see Comment Section below.			
003	Outfall has been removed, please see Comment Section below.			

Outfall #001 – Main facility outfall.

Legal Description: SW ¼, NE ¼, Sec. 4, T50N, R31W, Jackson County
 UTM Coordinates: X = 384919, Y = 4337733
 Receiving Stream: Missouri River (P)
 First Classified Stream and ID: Missouri River (P) (00356)
 USGS Basin & Sub-watershed No.: (10300101-050004)

Water Quality History:

Due to the fact that this wastewater treatment facility was constructed on or around October 2006, department staff drafting this fact sheet only reviewed data from October 2006 to present. No effluent violations were documented.

Comments:

All data reviewed during the determining and derivation of effluent limits is from October 2006 to present. This is due to the fact that this facility (upgraded/expanded) has been receiving and treating wastewater since that time.

Low flow data for the Missouri River’s 1Q10, 7Q10, and 30Q10 were obtained from flow data retrieved for USGS Gauging Station 06893000 – Missouri River at Kansas City, Missouri. The data set started from April 1, 1965, and ended on April 15, 2008.

On December 13, 2002, the department placed onto Public Notice, the draft operating permit for the now newly constructed treatment facility. As part of the design for treatment of domestic wastewater and to deal with Inflow & Infiltration matters, the new construction consisted of treatment processed based on influent flow (documented on page 2 of the operating permit).

Outfalls #002 and #003 (Stormwater) have been removed. On May 23, 2008, department staff drafting this operating permit and fact sheet conducted a site-visit of this treatment facility. As part of the site-visit, these two outfalls were investigated. Staff determined that these two outfalls will only contain storm water run-off from utility roads (paved) and grass berms. The berms are built around the treatment process to keep flood waters from the Missouri River from reaching any given treatment process. In addition, the sludge handling treatment process of this facility is all undercover.

On December 22, 2008, staff from DNR conducted a site visit of this facility and meeting. Several items were discussed during the meeting; however, the majority of the discussion was devoted to Sewer Extension Authority (for municipals connected to this treatment facility). After discussion of the details or actions that LBVSD would need to conduct for this authority, LBVSD staff indicated that they did not wish to pursue this authority. Department staff indicated that the department as well as LBVSD would work with the two main municipals (Lee’s Summit & Blue Springs) regarding sewer extensions.

Part II – Operator Certification Requirements

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Check boxes below that are applicable to the facility;

- Population Equivalent greater than two hundred (200):
- Fifty (50) or more service connections:

- Owned or operated by or for:
 - Municipalities
 - Public Sewer District:
 - County
 - Public Water Supply Districts:
 - Private sewer company regulated by the Public Service Commission:
 - State or Federal agencies:

- Department required:
The Department requires this facility to retain the services of a certified operator due to:

This facility currently requires an operator with an “A” Certification Level. Please see **Appendix A - Classification Worksheet**. Modifications made to the wastewater treatment facility may cause the classification to be modified. The name and certificate number of the facility operator is not being established in this fact sheet due to the fact that LBVSD determines the appropriate person(s). The main facility operator is required by 10 CSR 20-9 to have a minimum “A” Certification Level, all other operators may have a minimum of “D” Certification Level.

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri’s Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into 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**
Missouri River	P	00356	IRR, LWW, AQL, WBC(B)***, SCR, DWS, IND	10300101	Central Plains/ Blackwater/ Lamine

* - 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.

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Missouri River (P)	9691*	12282*	17563*

* - Low flow data for the Missouri River’s 1Q10, 7Q10, and 30Q10 were obtained from flow data retrieved for USGS Gauging Station 06893000 – Missouri River at Kansas City, Missouri. The data set started from April 1, 1964, and ended on April 1, 2008.

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4.B.(II)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)4.B.(II)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
2423	3071	4391	242	307	439

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

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

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

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

ANTI-BACKSLIDING:

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

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

ANTIDegradation:

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

- Renewal no degradation proposed and no further review necessary.

BIO-SOLIDS, SLUDGE, & SEWAGE SLUDGE:

Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works.

- This facility does not land apply sewage sludge. The sludge handling process consists of degritting of primary sludge, gravity thickening of primary sludge, gravity belt thickening of waste activated sludge, and combined thickened primary and waste activated sludge. This is followed by storage, thermal conditioning, belt filter press dewatering, and incineration with ash going to landfill and/or dewatered sludge going to landfill.

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.

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

PRETREATMENT PROGRAM:

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

- Permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of [40 CFR Part 403]. The approved pretreatment program is hereby incorporated by reference. Permittee shall submit to the department on or before March 31st of each year a report briefly describing its pretreatment activities during the previous calendar year.

REASONABLE POTENTIAL ANALYSIS (RPA):

Limitations must control all pollutants or pollutant parameters that are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above the Missouri Water Quality Standards.

- A RPA was conducted on appropriate parameters. Please see **APPENDIX B – RPA RESULTS**.

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs). Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm

- Secondary Treatment is 85% removal [40 CFR Part 133.102(a)(3) & (b)(3)].

SANITARY SEWER OVERFLOWS (SSOs), AND INFLOW & INFILTRATION (I&I):

Collection systems are a critical element in the successful performance of the wastewater treatment process. Under certain conditions, poorly designed, built, managed, operated, and/or maintained systems can pose risks to public health, the environment, or both. Causes of SSOs include, but are not limited to, the following: high levels of I&I during wet weather; blockages; structural, mechanical, or electrical failures; collapsed or broken sewer pipes; insufficient conveyance capacity; and vandalism. Effective and continuous management, operation, and maintenance, as well as ensuring adequate capacity and rehabilitation when necessary are critical to maintaining collection system capacity and performance while extending the life of the system.

- The permittee is required to develop or implement a program for maintenance and repair of the collection system and shall be required in this operating permit by either means of a Special Condition or Schedule of Compliance.

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.

- 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)]. In addition, the SOC for Fecal Coliform and disinfection where established in accordance with [10 CSR 20-6.010(7), and 10 CSR 20-7.015(9)(H)].

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.

- At this time, the permittee is not required to develop and implement a SWPPP.

VARIANCE:

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

Not Applicable ;

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

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

Applicable ;

Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

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.

Applicable ;

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

- Facility is a designated Major.
- Facility 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 NH₃)
- Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.

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 ;

The Missouri River is listed on the 2002 303(d) List for Chlordane and PCBs from point and non-point sources.

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

Part V – Effluent Limits Determination

Outfall #001 – Main Facility Outfall; Effluent Limitation Table:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	NO	
BOD ₅	MG/L	1		45	30	NO	
TSS	MG/L	1		45	30	NO	
PH	SU	1	6.0–9.0		6.0–9.0	NO	
TEMPERATURE	°C	1/8	*		*	YES	°F to °C
AMMONIA AS N (MAY 1 – OCT 31)	MG/L	2/3/5	47.3		18.1	YES	* WEEKLY
AMMONIA AS N (NOV 1 – APR 30)	MG/L	2/3/5	47.3		18.1	YES	* WEEKLY
ESCHERICHIA COLI	**	1/2	*		206**	YES	***
CHLORINE, TOTAL RESIDUAL	MG/L	1/2	0.053		0.026	N/A	N/A
OIL & GREASE (MG/L)	MG/L	1	15		10	NO	
CYANIDE, AMENABLE TO CHLORINATION	µg/L	2/9	*		*	YES	59/29
ARSENIC, TR	µg/L	2/9	*		*	YES	590/294
ANTIMONY, TR	µg/L	2/9	*		*	YES	177/88
CADMIUM, TR	µg/L	2/9	*		*	YES	183/91
CHROMIUM (III), TR	µg/L	2/9	*		*	YES	167/83
CHROMIUM (VI), TR	µg/L	2/9	*		*	YES	***
COPPER, TR	µg/L	2/9	*		*	YES	150/75
LEAD, TR	µg/L	2/9	*		*	YES	404/201
MERCURY, TR	µg/L	2/9	*		*	YES	6/3
NICKEL, TR	µg/L	2/9	*		*	NO	
SILVER, TR	µg/L	2/9	*		*	YES	29/14
ZINC, TR	µg/L	2/9	*		*	YES	1290/643
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.				
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

*- Monitoring requirement only

** - # of colonies/100mL; the Monthly Average for ESCHERICHIA COLI is a geometric mean.

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

N/A – Means Not Applicable – please see TRC Derivation & Discussion below.

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 | |

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD₅).** Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**
- **Total Suspended Solids (TSS).** Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**
- **pH.** Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**
- **Temperature.** Monitoring requirement due to the toxicity of Ammonia varies by temperature.
- **Total Ammonia Nitrogen.** The RPA for this facility has documented that this facility has potential to cause or contribute to exceedances of Missouri's Water Quality Standards, please see **APPENDIX B – RPA RESULTS**. Therefore, effluent limitations are applicable. Due to the number of samples being less than ten (10) for each season, the default CV value of 0.6 is applicable. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen of 0.34 mg/L (Summer) and 0.42 mg/L (Winter). Calculations below use the more protective LTA in determining the MDL and AML.

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

Summer: May 1 – October 31, Winter: November 1 – April 30

Summer

Chronic WLA: $C_e = ((80.6 + 4391)1.5 - (4391 * 0.34))/80.6$
 $C_e = 64.7 \text{ mg/L}$

Acute WLA: $C_e = ((80.6 + 242)12.1 - (242 * 0.34))/80.6$
 $C_e = 47.4 \text{ mg/L}$

$LTA_c = 64.7 \text{ mg/L} (0.780) = 50.5 \text{ mg/L}$ [CV = 0.6, 99th Percentile, 30 day avg.]
 $LTA_a = 47.4 \text{ mg/L} (0.321) = \mathbf{15.2 \text{ mg/L}}$ [CV = 0.6, 99th Percentile]

MDL = $15.2 \text{ mg/L} (3.11) = 47.3 \text{ mg/L}$ [CV = 0.6, 99th Percentile]
 AML = $15.2 \text{ mg/L} (1.19) = 18.1 \text{ mg/L}$ [CV = 0.6, 95th Percentile, n=30]

Winter

Chronic WLA: $C_e = ((80.6 + 4391)3.1 - (4391 * 0.42))/80.6$
 $C_e = 149.1 \text{ mg/L}$

Acute WLA: $C_e = ((80.6 + 242)12.1 - (242 * 0.42))/80.6$
 $C_e = 47.2 \text{ mg/L}$

$LTA_c = 149.1 \text{ mg/L} (0.780) = 116.3 \text{ mg/L}$ [CV = 0.6, 99th Percentile, 30 day avg.]
 $LTA_a = 47.2 \text{ mg/L} (0.321) = \mathbf{15.2 \text{ mg/L}}$ [CV = 0.6, 99th Percentile]

MDL = $15.2 \text{ mg/L} (3.11) = 47.3 \text{ mg/L}$ [CV = 0.6, 99th Percentile]
 AML = $15.2 \text{ mg/L} (1.19) = 18.1 \text{ mg/L}$ [CV = 0.6, 95th Percentile, n=30]

- **Escherichia coli (E. coli).** E. coli effluent limitations have been approved by Department management for the renewal of this operating permit. The permittee will be allowed to monitor for E. coli rather than Fecal Coliform. Upon completion of construction the applicant must submit a permit modification request to the Department. When

the permit is modified it will contain the appropriate limitations and monitoring frequency for E. coli. The operating permit's effluent limitation for E. coli will contain both a weekly average value and a monthly average value.

- **Total Residual Chlorine (TRC).** Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background TRC = 0.0 µg/L.

Chronic WLA: $C_c = ((80.6 + 1446.8)10 - (1446.8 * 0.0))/80.6$
 $C_c = 189.5 \text{ mg/L}$

Acute WLA: $C_c = ((80.6 + 144.7)19 - (144.7 * 0.0))/80.6$
 $C_c = 53.1 \text{ mg/L}$

$LTA_c = 189.5 (0.527) = 99.9 \text{ µg/L}$ [CV = 0.6, 99th Percentile]
 $LTA_a = 53.1 (0.321) = 17.0 \text{ µg/L}$ [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

$MDL = 17 (3.11) = 52.9 \text{ µg/L}$ [CV = 0.6, 99th Percentile]
 $AML = 17 (1.55) = 26.4 \text{ µg/L}$ [CV = 0.6, 95th Percentile, n = 4]

Total Residual Chlorine effluent limits of 0.053 mg/L daily maximum, 0.026 mg/L monthly average are recommended if chlorine is used as a disinfectant. Standard compliance language for TRC, including the minimum level (ML), should be included in the permit.

- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Monitoring only requirements.** The list below contains the pollutants that have a monitoring only requirement. A RPA was conducted on each pollutant and was compared with the applicable designated uses for the Missouri River (IRR, LWW, AQL, DWS, IND). The RPA indicates that the below pollutants do not have the potential or are not causing violations of Missouri's Water Quality Standards. However, it is staff's best professional judgment that these pollutants remain as monitoring only requirements due to the fact that this facility receives industrial pretreated wastewater. Please see **APPENDIX B – RPA RESULTS** for each individual pollutants results.

- | | |
|--|-------------------|
| Cyanide, Amenable to Chlorination | Copper, TR |
| Arsenic, TR | Lead, TR |
| Mercury, TR | Nickel, TR |
| Antimony, TR | Silver, TR |
| Cadmium, TR | Zinc, TR |
| Chromium (III & VI), TR | |

- **WET Test.** WET Testing schedules and intervals are established in accordance with the department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

- Chronic
- Acute

- No less than ONCE/PERMIT CYCLE:**
 - Municipality or domestic facility with a design flow $\geq 22,500 \text{ gpd}$, but less than 1.0 MGD.
 - Other, please justify.

- No less than ONCE/YEAR:**
 - Facility is designated as a Major facility or has a design flow $\geq 1.0 \text{ MGD}$.

- Facility continuously or routinely exceeds their design flow.
- Facility exceeds its design population equivalent (PE) for BOD₅ whether or not its design flow is being exceeded.
- Facility has Water Quality-based effluent limitations for toxic substances (other than NH₃).

No less than TWICE/YEAR:

- Facility is subject to production processes alterations throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has been granted seasonal relief of numeric limitations.

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

$$\text{Acute AEC} = ((\text{design flow}_{\text{cfs}} + \text{ZID}_{7\text{Q}10}) / \text{design flow}_{\text{cfs}})^{-1} \times 100$$
$$\text{Acute AEC} = ((80.6 + 307) / 80.6)^{-1} \times 100$$
$$\text{Acute AEC} = 20.79\% \text{ (rounded up to 21\%)}$$

- **Minimum Sampling and Reporting Frequency Requirements.** In accordance with [10 CSR 20-7.015(2)(D)1.] this facility's minimum sampling requirement (MSR) is based its design flow at one (1) sample per year per 50,000 gpd.

$$\text{MSR} = 52 \text{ MGD} = 52,000,000 \text{ gpd}$$

$$\text{MSR} = (52,000,000 \text{ gpd} / 50,000 \text{ gpd}) / 12 \text{ months per year} / 4 \text{ weeks per month} / 7 \text{ days a week} = 3 \text{ samples per day}$$

However, in accordance with [10 CSR 20-7.015(2)(D)3.B.] the sampling method for this facility is to be 24 hr. composite, and due to the fact that this facility does not have laboratory staff during Sunday. This facility will receive a minimum sampling requirement of once per weekday and a reporting frequency of once per month. However, some pollutants shall maintain their previous sampling requirement of once per month due to the fact that they are pretreated prior to entering this facility's collections system. The minimum sampling requirement and reporting requirement are as follows:

Part VI – 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 initial Public Notice period for this operating permit was from September 26, 2008, to October 29, 2008. Several comments received from the permittee requesting modifications to the draft permit. Very few of these modifications were approved. However, due to the fact that it has been determined appropriate to establish E. coli limits in the operating permit, an additional Public Notice has been determined necessary in order to allow the EPA and others to comment. The second Public Notice for this operating permit is to begin on January 9, 2009, or is in process.

In response to the 2nd PN that began on January 9, 2009, the EPA issued an Interim Objection (objection) on February 20, 2009. The EPA Region VII objection was a request to document a "no feasible alternative analysis" (analysis) regarding proposed bypasses at this facility. The operating permit's Facility Description now includes language documenting that bypasses are to be reported via 40 CFR 122.41(m). The LBVSD is currently in the process of implementing their Phase 2 WWTP and Conveyance System Improvements. As a part of the Phase 2, the LBVSD is in discussion to obtain 94 MG storm water basin, which will significantly reduce peak flows received by the treatment facility. Therefore, the draft operating permit will be placed onto Public Notice again.

DATE OF FACT SHEET: APRIL 30, 2008; REVISED JULY 21, 2008; REVISED JANUARY 6, 2009; REVISED FEBRUARY 24, 2010.

COMPLETED & REVISED BY:
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Part VII – Appendices

APPENDIX A - CLASSIFICATION WORKSHEET:

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Maximum Population Equivalent (P.E.) served (Max 10 pts.)	1 pt./10,000 PE or major fraction thereof.	10
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	10
EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:		
Missouri or Mississippi River	0	0
All other stream discharges except to losing streams and stream reaches supporting whole body contact	1	--
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	--
Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	--
PRELIMINARY TREATMENT - Headworks		
Screening and/or comminution	3	3
Grit removal	3	3
Plant pumping of main flow (lift station at the headworks)	3	3
PRIMARY TREATMENT		
Primary clarifiers	5	5
Combined sedimentation/digestion	5	--
Chemical addition (except chlorine, enzymes)	4	4
REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)		
Lab work conducted outside of plant	0	--
Push – button or visual methods for simple test such as pH, Settleable solids	3	--
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	--
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	7
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	--
ALTERNATIVE FATE OF EFFLUENT		
Direct reuse or recycle of effluent	6	6
Land Disposal – low rate	3	--
High rate	5	--
Overland flow	4	--
Total from page ONE (1)	----	41

APPENDIX A - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)		
Variation do not exceed those normally or typically expected	0	0
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow	2	--
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	--
Raw wastes subject to toxic waste discharge	6	--
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers	10	--
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	15
Stabilization ponds without aeration	5	--
Aerated lagoon	8	--
Advanced Waste Treatment Polishing Pond	2	--
Chemical/physical – without secondary	15	15
Chemical/physical – following secondary	10	--
Biological or chemical/biological	12	--
Carbon regeneration	4	--
DISINFECTION		
Chlorination or comparable	5	--
Dechlorination	2	--
On-site generation of disinfectant (except UV light)	5	--
UV light	4	--
SOLIDS HANDLING - SLUDGE		
Solids Handling Thickening	5	5
Anaerobic digestion	10	--
Aerobic digestion	6	--
Evaporative sludge drying	2	--
Mechanical dewatering	8	8
Solids reduction (incineration, wet oxidation)	12	12
Land application	6	--
Total from page TWO (2)	---	55
Total from page ONE (1)	---	41
Grand Total	---	96

- A: 71 points and greater
- B: 51 points – 70 points
- C: 26 points – 50 points
- D: 0 points – 25 points

APPENDIX B – RPA RESULTS:

PARAMETER	AQL CMC*	RWC ACUTE*	AQL CCC*	RWC CHRONIC*	DWS*	RWC DWS*	REASONABLE POTENTIAL	# OF SAMPLES**	CV***
AMMONIA (MG/L) (SUMMER)	12.1	16.0	1.5	1.4	N/A	N/A	YES	7	0.6
AMMONIA (MG/L) (WINTER)	12.1	15.6	3.1	1.5	N/A	N/A	YES	8	0.6
CHLORIDE (MG/L)	860	80.4	230	9.5	250	9.5	No	15	0.428
SULFATE (MG/L)	N/A	N/A	N/A	N/A	250	7.0	No	15	0.237
CYANIDE	22	6.5	5	0.8	N/A	N/A	No	15	0.783
ANTIMONY	N/A	N/A	N/A	N/A	6.0	0.1	No	15	0.0
CADMIUM	9.1	0.5	0.4	0.1	5.0	0.1	No	14	0.0
CHROMIUM (III)	980	0.7	128	0.1	100	0.1	No	15	0.18
CHROMIUM (VI)	N/A DUE TO SPECIATION OF CHROMIUM								
COPPER	25	3.1	13	0.4	1300	0.4	No	15	0.317
MERCURY	2.4	0.02	0.5	0.00	2.0	0.01	No	15	0.13
LEAD	132	0.9	5.0	0.1	15	0.1	No	14	0.0
NICKEL	821	5.3	91	0.6	100	0.6	No	14	0.63
SILVER	10.1	0.3	N/A	N/A	50	0.3	No	14	0.303
ZINC	205	22.1	188	0.6	5000	0.6	No	15	0.416

N/A – Not Applicable

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

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

However if it is 10 or less then the default CV value of 0.6 is used.

*** - Coefficient of Variation (CV) is calculated by dividing the Mean of the sample by the Standard Deviation of the sample. CV values of 0.0 usually mean that many, if not all, of the samples were detection concentrations or below detection limit concentrations.

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2).

A more detailed version including calculations of this RPA is available upon request.