

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-0121916

Owner: Village of Livonia
Address: P.O. Box 11, Livonia, MO 63551

Continuing Authority: Public Water Supply District No. 1 of Putnam County, Missouri
Address: 28421 Highway 136, Unionville, MO 63565

Facility Name: Livonia Wastewater Treatment Facility
Facility Address: 0.5 miles northeast of Highway 136 & Highway N intersection, Livonia, MO 63551

Legal Description: SW ¼, SW ¼, SW ¼, Sec. 27, T66N, R16W, Putnam County
UTM Coordinates: X= 526189, Y=4482073

Receiving Stream: Old Channel Chariton River (C)
First Classified Stream and ID: Old Channel Chariton River (C) (649)
USGS Basin & Sub-watershed No.: (10280201-0407)

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

FACILITY DESCRIPTION

Outfall #001 – POTW – SIC #4952
Three-cell lagoon / sludge retained in lagoon
Design population equivalent is 155.
Design flow is 15,500 gallons per day.
Actual flow is 5,100 gallons per day.
Design sludge production is 3.4 dry tons/year.

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

September 1, 2013
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

September 30, 2015
Expiration Date

John Madras, Director, Water Protection Program

OUTFALL #001	TABLE A-1. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS			PAGE NUMBER 2 of 6		
				PERMIT NUMBER MO-0121916		
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 through August 31, 2023 . Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow (Note 1)	MGD	*		*	once/weekday**	24 hr. estimate
Biochemical Oxygen Demand ₅ (Note 1)	mg/L		65	45	once/month	grab
Total Suspended Solids (Note 1)	mg/L		110	70	once/month	grab
<i>E. coli</i> (Notes 1 & 2)	#/100 ml		630	126	once/month	grab
pH – Units (Note 1)	SU	***		***	once/month	grab
Ammonia as N (Note 1)	mg/L	*		*	once/month	grab
Oil & Grease (Note 1)	mg/L	15		10	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2013</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

* Monitoring requirement only.

** Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.

*** pH is measured in pH units and is not to be averaged. The pH is to be maintained at or above 6.5 pH units.

Note 1 - Controlled discharges from Outfall #001 shall be conducted according to the requirements of Special Condition #20.

Note 2 - Effluent limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for *E. coli* is expressed as a geometric mean. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one (1) sample is collected during a calendar week (Sunday through Saturday).

OUTFALL #001	TABLE A-2. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				PAGE NUMBER 3 of 6	
	PERMIT NUMBER MO-0121916					
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 September 1, 2023 , and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow (Note 1)	MGD	*		*	once/weekday**	24 hr. estimate
Biochemical Oxygen Demand ₅ (Note 1)	mg/L		65	45	once/month	grab
Total Suspended Solids (Note 1)	mg/L		110	70	once/month	grab
<i>E. coli</i> (Notes 1 & 2)	#/100 ml		630	126	once/month	grab
pH – Units (Note 1)	SU	***		***	once/month	grab
Ammonia as N (Note 1) (April 1 – Sept 30) (Oct 1 – March 31)	mg/L	3.6 7.5		1.4 2.9	once/month	grab
Oil & Grease (Note 1)	mg/L	15		10	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2023</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

* Monitoring requirement only.

** Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.

*** pH is measured in pH units and is not to be averaged. The pH is to be maintained at or above 6.5 pH units.

Note 1 - Controlled discharges from Outfall #001 shall be conducted according to the requirements of Special Condition #20.

Note 2 - Effluent limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for *E. coli* is expressed as a geometric mean. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one (1) sample is collected during a calendar week (Sunday through Saturday).

**TABLE B.
INFLUENT MONITORING REQUIREMENTS**

The facility is required to meet a removal efficiency of 65% or more as a monthly average. 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
Biochemical Oxygen Demand ₅	mg/L	once/year	grab
Total Suspended Solids	mg/L	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2014</u> .			

C. 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, May 1, 2013, and August 15, 1994, and hereby incorporated as though fully set forth herein.

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. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.
4. 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.

D. SPECIAL CONDITIONS (continued)

5. Changes in Discharges of Toxic Substances

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

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

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

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

8. The permittee shall comply with any applicable requirements listed in 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.

9. The permittee shall submit a report annually in January to the Northeast Regional Office with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility for the previous year.

10. Bypasses are not authorized at this facility and are subject to 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3)(i), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Northeast Regional Office.

11. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.

12. A least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain closed except when temporarily opened by; the permittee to access the facility, perform operational monitoring, sampling, maintenance, mowing, or for inspections by the Department. The gate shall be closed and locked when the facility is not staffed.

13. At least one (1) warning sign shall be placed on each side of the facility enclosure in such positions as to be clearly visible from all directions of approach. There shall also be one (1) sign placed for every five hundred feet (500') (150 m) of the perimeter fence. A sign shall also be placed on each gate. Minimum wording shall be SEWAGE TREATMENT FACILITY—KEEP OUT. Signs shall be made of durable materials with characters at least two inches (2") high and shall be securely fastened to the fence, equipment or other suitable locations.

14. An Operation and Maintenance (O & M) manual shall be maintained by the permittee and made available to the operator. The O & M manual shall include key operating procedures and a brief summary of the operation of the facility.

15. An all-weather access road shall be provided to the treatment facility.

D. SPECIAL CONDITIONS (continued)

16. The discharge from the wastewater treatment facility shall be conveyed to the receiving stream via a closed pipe or a paved or rip-rapped open channel. Sheet or meandering drainage is not acceptable. The outfall sewer shall be protected against the effects of floodwater, ice or other hazards as to reasonably insure its structural stability and freedom from stoppage. The outfall shall be maintained so that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.
17. A minimum of two (2) feet freeboard must be maintained in the lagoon cell.
18. The berms of the lagoon shall be mowed and kept free of any deep-rooted vegetation, animal dens, or other potential sources of damage to the berms.
19. The facility shall ensure that adequate provisions are provided to prevent surface water intrusion into the lagoon and to divert stormwater runoff around the lagoon and protect embankments from erosion.
20. Controlled Discharges.
 - (a) The term “controlled discharge” used herein shall mean a discharge event that allows water to flow from the facility through the permitted outfall into the receiving stream that is initiated by the operator by means of opening a single or multiple valves, gates, or other operational control and then stopped by the operator by closing the same valves, gates, or other operational control. A controlled discharge event occurs from when the valve is opened to release water till the valve is next shut to prevent water from discharging.
 - (b) Controlled discharges shall be limited to 15,500 gallons per day. Discharges above 15,500 gallons per day are allowed to occur through the effluent overflow pipe structure when storage capacity is exceeded during periods of heavy precipitation.
 - (c) Sampling for all applicable effluent limitations in Table A during a controlled discharge shall be conducted for every controlled discharge event, and at least weekly, with at least two sampling events during the controlled discharge events. One sampling event shall be conducted near the beginning of the controlled discharge event and another sampling event conducted near the end of the controlled discharge event. Controlled discharge sampling results can be considered as the monthly sampling requirement as required by Table A.
 - (d) To avoid adversely affecting the hydrology of the receiving stream, means to dissipate the energy of the controlled discharge flow shall be provided. Energy dissipation may be provided by rip-rap, diffuser, or other department approved method.
 - (e) Effluent limitations and Water Quality Standards shall not be violated at any time during a controlled discharge event.

E. SCHEDULE OF COMPLIANCE

The facility shall attain compliance with final effluent limitations for Ammonia as N as soon as reasonably achievable or no later than **10 years** of the effective date of this permit.

1. Within six months of the effective date of this permit, the permittee shall report progress made in attaining compliance with the final effluent limits.
2. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits every 12 months from issuance date.
3. Within **10 years** of the effective date of this permit, the permittee shall attain compliance with the final effluent limits, for Ammonia as N.

Please submit progress reports to the Missouri Department of Natural Resources, Northeast Regional Office, 1709 Prospect Drive, Macon, Missouri, 63552.

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0121916
LIVONIA WASTEWATER TREATMENT FACILITY**

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 Minor

Part I – Facility Information

Facility Type: POTW - SIC #4952

Facility Description:

Three-cell lagoon / sludge retained in lagoon

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

- No.

Application Date: 02/08/2012

Expiration Date: 03/22/2012

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
#001	0.024	Equivalent to Secondary	Domestic	0

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

No stream surveys have been conducted for this facility. The facility has reported No-Discharge on 60 out of the last 66 Discharge Monitoring Reports (DMR). The facility reported discharges on the November 2007, October 2008, and March 2009 DMRs. The facility failed to report Flow on the April and May 2007 DMRs. The facility failed to submit the June 2007 DMR. This facility was last inspected on March 16, 2011. The conditions of the facility at the time of inspection were found to be satisfactory.

Comments:

The permit writer is concerned about the lack of discharges from the lagoon system, especially during the extremely wet weather periods that occurred in 2007, 2008, and 2009. This facility conducts controlled discharges from the lagoon system as stated on the application for renewal and as evidenced on the discharge monitoring reports that show several months of no-discharge. The facility was designed to be operated as either a flow through or controlled discharge system. During a controlled discharge, the facility may begin drawing from areas in the lagoon that have not received full treatment as the water level is lowered in the lagoon cell. This becomes more of a problem if the lagoon is drawn down in a few days. Although the discharge might meet effluent limitations at the beginning, it may not at the end. Additional sampling requirements are included as Note 1 and Special Conditions #20 in the permit. Special Condition #20 also limits the amount of water that can be released during a controlled discharge to 15,500 gallons per day.

Part II – Operator Certification Requirements

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

Part III– Operational Monitoring

As per [10 CSR 20-9.010(4)], the facility is required to conduct operational monitoring.

Part IV – Receiving Stream Information

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:

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	EDU**
Old Channel Chariton River	C	649	LWW, AQL, WBC-B	10280201-0407	Central Plains/Grand/Chariton
Chariton River	P	640	IRR, LWW, AQL, WBC-A, SCR		

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

** - Ecological Drainage Unit

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Old Channel Chariton River (C)	0	0	0.1

MIXING CONSIDERATIONS

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)...]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)...]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
0	0	0	0	0	N/A

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.

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

ANTI-BACKSLIDING:

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

- All limits in this operating permit 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.

- No degradation proposed and no further review necessary. Facility did not apply for authorization to increase pollutant loading or to add additional pollutants to their discharge.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

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

BIOSOLIDS & SEWAGE SLUDGE:

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

- Permittee is not authorized to land apply biosolids. Sludge/biosolids are removed by contract hauler, incinerated, stored in the lagoon, etc. The permittee must submit a sludge management plan for approval that details removal and disposal plans when sludge is to be removed from lagoons.

COMPLIANCE AND ENFORCEMENT:

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

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

PRETREATMENT PROGRAM:

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

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

REASONABLE POTENTIAL ANALYSIS (RPA):

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

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

Not Applicable ; A RPA was not conducted for this facility. The facility reported two (2) Ammonia as N data points on the facility's Discharge Monitoring Reports (DMR) submitted since March 2007. The facility reported an Ammonia as N of 11.6 mg/L and a pH of 8.7 on the March 2009 DMR. The reported Ammonia as N of 11.6 mg/L based on a discharge pH of 8.7 was significantly above the Water Quality Standards for Ammonia as N, which is 2.2 mg/L. As the facility violated Water Quality Standards for Ammonia as N during the March 2009 discharge, the permit writer made a determination that final effluent limitations for Ammonia as N were appropriate.

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)/municipals.

Applicable ; Equivalent to Secondary Treatment is 65% removal [40 CFR Part 133.105(a)(3) & (b)(3)].

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

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

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

- In accordance with Missouri RSMo §644.026.1.(15) and 40 CFR Part 122.41(e), the permittee is required to develop and/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. In addition, the Department considers the development of this program as an implementation of this condition. Additionally, 40 CFR Part 403.3(o) defines a POTW to include any device and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW Treatment Plant.

At this time, the Department recommends the US EPA's Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002). The CMOM identifies some of the criteria used by the EPA to evaluate a collection system's management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.

SCHEDULE OF COMPLIANCE (SOC):

Per 644.051.4 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes 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. *See also* Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit includes interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1) and 10 CSR 20-7.031(10), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, a SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

A SOC is not allowed:

- For effluent limitations based on technology-based standards established in accordance with federal requirements, if the deadline for compliance established in federal regulations has passed. 40 CFR § 125.3.
- For a newly constructed facility in most cases. Newly constructed facilities must meet applicable effluent limitations when discharge begins, because the facility has installed the appropriate control technology as specified in a permit or antidegradation review. A SOC is allowed for a new water quality based effluent limit that was not included in a previously public noticed permit or antidegradation review, which may occur if a regulation changes during construction.
- To develop a TMDL, UAA, or other study associated with development of a site specific criterion. A facility is not prohibited from conducting these activities, but a SOC may not be granted for conducting these activities.

In order to provide guidance to Permit Writers in developing SOCs, and attain a greater level of consistency, on October 25, 2012 the department issued a policy on development of SOCs. This policy provides guidance to Permit Writers on the standard time frames for schedules for common activities, and guidance on factors that may modify the length of the schedule such as an affordability analysis.

Applicable ; The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)]. The facility has been given a schedule of compliance to meet final effluent limits for Ammonia as N. The seven year schedule of compliance allowed for this facility should provide adequate time to evaluate operations, obtain an engineering report, hold a bond election, obtain a construction permit and implement upgrades required to meet effluent limits. Due to the high economic burden on this community of the cost of compliance and associated difficulty in raising the necessary funding, the schedule has been established at 7 years in accordance with the department's "Schedule of Compliance, Policy for Staff Drafting Operating Permits". Please see the Affordability Analysis attached as an appendix to the permit for further detail on how the socio-economic status of the community has impacted this SOC.

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

Not Applicable ; 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 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:

$$C_e = \frac{(Q_e + Q_s)C - (C_s \times Q_s)}{(Q_e)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

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).

Number of Samples "n":

Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

WLA MODELING:

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

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

WATER QUALITY STANDARDS:

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

WHOLE EFFLUENT TOXICITY (WET) TEST:

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

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

40 CFR 122.41(M) - BYPASSES:

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

Not Applicable ; This facility does not anticipate bypassing.

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.

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

Part V – Effluent Limits Determination

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 lists effluent limitations for specific parameters, which are presented in each outfall’s Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

- 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)]:

OUTFALL #001 – MAIN FACILITY OUTFALL

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

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Modified	Previous Permit Limitations
Flow	MGD	1	*		*	No	*/*
BOD ₅	mg/L	1, 4		65	45	No	65/45
TSS	mg/L	1, 4		110	70	No	110/70
pH	SU	1, 4	≥ 6.5			Yes	≥ 6.0
Ammonia as N (April 1 – Sept 30)	mg/L	2, 3, 5	3.6		1.4	Yes	*/*
Ammonia as N (Oct 1 – March 31)	mg/L	2, 3, 5	7.5		2.9		*/*
Escherichia coli	***	1, 3		630	126	Yes	Previously Fecal Coliform
Oil & Grease (mg/L)	mg/L	1, 3	15		10	No	15/10

* - Monitoring requirement only.

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

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

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

Basis for Limitations Codes:

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

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 limitation range is ≥ 6.5 Standard pH Units (SU), as per the applicable section of 10 CSR 20-7.015. pH is not to be averaged.

- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU Background total ammonia nitrogen = 0.01 mg/L . No mixing considerations allowed; therefore, WLA = appropriate criterion.

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

Summer: April 1 – September 30

Chronic WLA: $C_e = ((0.024 + 0.0)1.5 - (0.0 * 0.01))/0.024$
 $C_e = 1.5 \text{ mg/L}$

Acute WLA: $C_e = ((0.024 + 0.0)12.1 - (0.0 * 0.01))/0.024$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L} (0.780) = 1.17 \text{ mg/L}$
 $LTA_a = 12.1 \text{ mg/L} (0.321) = 3.89 \text{ mg/L}$

[CV = 0.6, 99th Percentile, 30 day avg.]
 [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 1.17 mg/L (3.11) = 3.6 mg/L
 AML = 1.17 mg/L (1.19) = 1.4 mg/L

[CV = 0.6, 99th Percentile]
 [CV = 0.6, 95th Percentile, n=30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((0.024 + 0.0)3.1 - (0.0 * 0.01))/0.024$
 $C_e = 3.1 \text{ mg/L}$

Acute WLA: $C_e = ((0.024 + 0.0)12.1 - (0.0 * 0.01))/0.024$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L} (0.780) = 2.42 \text{ mg/L}$
 $LTA_a = 12.1 \text{ mg/L} (0.321) = 3.89 \text{ mg/L}$

[CV = 0.6, 99th Percentile, 30 day avg.]
 [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 2.42 mg/L (3.11) = 7.5 mg/L
 AML = 2.42 mg/L (1.19) = 2.9 mg/L

[CV = 0.6, 99th Percentile]
 [CV = 0.6, 95th Percentile, n=30]

- **Escherichia coli (E. coli).** Monthly average of 126 per 100 ml as a geometric mean and Weekly Average of 630 during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (A) designated use of the receiving stream, the Chariton River, as per 10 CSR 20-7.031(4)(C). Weekly Average effluent variability will be evaluated in development of a future effluent limit. An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d).

- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
Flow	once/weekday	once/month
BOD ₅	once/month	once/month
TSS	once/month	once/month
pH	once/month	once/month
Ammonia as N	once/month	once/month
<i>E. coli</i>	once/month	once/month
Oil & Grease	once/month	once/month

Sampling Frequency Justification:

Sampling and Reporting Frequency was increased to once per month except for Flow, which was increased to once per weekday. The changes are due to the fact that the facility has had a significant amount of no-discharge reports.

Sampling Type Justification

As per 10 CSR 20-7.015, samples collected for lagoons shall be grab samples

Part VI – Finding of Affordability

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

Applicable; The Department is required to determine findings of affordability because the permit applies to a **combined or separate sanitary sewer system for a publically-owned treatment works.**

Finding of affordability - The department has made a reasonable search for empirical data indicating the permit is affordable. The search consisted of a review of department records that might contain economic data on the community, a review of information provided by the applicant as part of the application, and public comments received in response to public notices of this draft permit. If the empirical cost data was used by the permit writer, this data may consist of median household income, any other ongoing projects that the Department has knowledge, and other demographic financial information that the community provided as contemplated by Section 644. 145.3. See **Appendix – Affordability Analysis**

Part VII – Administrative Requirements

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

PUBLIC NOTICE:

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

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

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

- The Public Notice period for this operating permit was from June 14, 2013, to July 15, 2013. No responses received.

DATE OF FACT SHEET: APRIL 24, 2013

COMPLETED BY:

**BRANT FARRIS, ENVIRONMENTAL SPECIALIST III
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(660) 385-8061
brant.farris@dnr.mo.gov**

Appendices

APPENDIX – AFFORDABILITY ANALYSIS:

**Missouri Department of Natural Resources
Water Protection Program
Affordability Determination and Finding
(In accordance with RSMo 644.145)**

**Livonia Wastewater Treatment Facility, Permit Renewal
Public Water Supply District No. 1 of Putnam County, Missouri
#MO-0121916**

Section 644.145 RSMo requires the Missouri Department of Natural Resources to make a “finding of affordability” when “issuing permits under” or “enforcing provisions of” state or federal clean water laws “pertaining to any portion of a combined or separate sanitary sewer system or publicly-owned treatment works.”

Description:

The Livonia Wastewater Treatment Facility is located approximately 0.5 miles northeast of Highway 136 and Highway N intersection, Livonia, Missouri. The facility discharges to Old Channel Chariton River.

Residential Connections: 44
Commercial Connections: 1
Total Connections: 45

New Permit Requirements or Requirements Now Being Enforced:

The facility is being required to; upgrade to meet effluent limitations for Ammonia as N, pH, and E. coli, conduct annual influent monitoring for Biochemical Oxygen Demand and Total Suspended Solids, and submit an annual report on measures taken to locate and eliminate sources of infiltration and inflow into the collection system.

Range of Anticipated Costs Associated with Complying with Requirements:

As the facility will be required to upgrade to meet effluent limitations, estimated costs for four different treatment types to comply with the requirements, range from \$508,350 to \$1,566,800. The estimated costs depend on the treatment type selected by the facility. Assumptions in these calculations include but are not limited to; interest rate, design life of the facility, inflation factor, administration labor costs, and laboratory labor costs. Other options that may be available to the facility but not reviewed during the review include no-discharge land application and connection to an available facility with an area-wide management plan.

(1) A community's financial capability and ability to raise or secure necessary funding

(examine key indicators of the community's ability to raise funds):

Current User Rates (monthly 5,000 gpd usage): \$32.75

Rate Capacity or Pay as You Go Option:

Municipal Bond Rating (if applicable): NA

Bonding Capacity: NA

*(General Obligation Bond capacity allowed by constitution:
cities=up to 20% of taxable tangible property
sewer districts=up to 5% of taxable tangible property)*

Current outstanding debt: \$2,179,771*

* - current debt for 2011 for water and wastewater systems

Other indicators:

If the facility increases user rates to finance and operate an upgrade, the rates may need to be between \$144 and \$352 per month, which may make each household rate as high as 10.6% to 25.9% of the community's median household income (MHI). Percentages above 2% could create a high burden for a community.

(2) Affordability of pollution control options for the individuals or households of the community:

Current annual operating costs (exclude depreciation): \$10,050

Current annual user rate: \$393.00

Estimated capital cost of pollution control options: ⁶ \$508,350 - \$1,566,800

Annual cost of additional *(operating costs and debt service)*: ⁶ \$60,464 - \$1,345,900

Estimated resulting User Rate and/or Cost per Household: ⁶ \$144 - \$352

Median Household Income: ³ \$16,264

Rate and/or Cost per Household as a
Percent of Median Household Income: 10.6% - 25.9%

(Rate or Cost/MHI) Check Appropriate Box	Financial Impact	Residential Indicator (Cost or Usage Rate as a percent of Median Household Income)
<input type="checkbox"/>	Low	Less than 1% MHI
<input type="checkbox"/>	Medium	Between 1% and 2% MHI
<input checked="" type="checkbox"/>	High	Greater than 2% MHI

A 5,000 gallon per month residential user currently pays approximately \$32.75 per month, based on the sewer rate information contained in the Affordability Information Form completed by the facility and received by the Department on January 14, 2013. With the additional costs of upgrading the facility to meet effluent limitations a rate increase would be necessary. The approximate monthly user rate would increase to \$144 or \$352 depending on which treatment option is chosen by the facility, which is about 10.6% to 25.9% of the MHI. This would result in a high financial impact to the users.

(3) An evaluation of the overall costs and environmental benefits of the control technologies:

The following is a discussion of the environmental benefits of the conditions of the permit. Ammonia (NH3) is toxic to aquatic life and can damage habitat for ammonia sensitive species. Removal of NH3 is beneficial to the environment because this can reduce damage to aquatic life in accordance with 10 CSR 20-7 and the Clean Water Act. Removal can enable the stream habitat to support a more healthy and diverse population of aquatic life. This facility has Ammonia as N final effluent limitations based on the Water Quality Standards (WQS) found in the above citation. There is environmental benefit for removing ammonia. The facility would be contributing to the reduction of damage to aquatic life by removing the value of ammonia shown above.

(4) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to, low and fixed income populations. This requirement includes but is not limited to:

(a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations; and

(b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained.

Potentially Distressed Populations for – Livonia	
Unemployment ²	7.1%
Median Household Income ³	\$16,264
Percentage Change in Median Household Income (1990–2011) ³	-9.4%
Percentage Population Growth/Decline (1990-2011) ⁴	-54.8%
Change in Median Age in Years (1990-2011) ⁴	+1.5
Percent of Households in Poverty ⁵	61.4%
Percent of Households Relying on Food Stamps ⁵	48%

Opportunity for cost savings or cost avoidance:

None Noted

Opportunity for changes to implementation/compliance schedule:

The Department has included a ten (10) year time Schedule of Compliance for the facility to meet the final effluent limitations for Ammonia as N in the draft permit.

(5) An assessment of other community investments relating to environmental improvements:

No listed

(6) An assessment of factors set forth in the United States Environmental Protection Agency's guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to, small system considerations, the attainability of water quality standards, and the development of wet weather standards:

See Section (2) of this analysis for the residential indicator as outlined in the above-referenced EPA guidance.

Secondary indicators for consideration:

Socioeconomic, Debt and Financial Indicators

Indicators	Strong (3 points)	Mid-Range (2 points)	Weak (1 point)	Score
Bond rating indicator	Above BBB or Baa	BBB or Baa	Below BBB or Baa	NA
Overall net debt as a % of full market property value	Below 2%	2% - 5%	Above 5%	NA
Unemployment Rate	>1% below Missouri average	± 1% of Missouri average	>1% above Missouri average	2
Median household income	More than 25% above Missouri MHI	± 25% of Missouri MHI	More than 25% below Missouri average	1
Property tax revenues as a % of full market property value	Below 2%	2% - 4%	Above 4%	NA
Property tax collection rate	Above 98%	94% - 98%	Below 94%	NA

Average Score for Financial Capability Matrix: 1.5
Residential Indicator (from Criteria #2 above): 10.6% - 25.9%

Financial Capability Matrix

Financial Capability Indicators Score from above ↓	Residential Indicator (User rate as a % of MHI)		
	Low (Below 1%)	Mid-Range (Between 1.0% and 2.0%)	High (Above 2.0%)
Weak (below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (1.5 – 2.5)	Low Burden	Medium Burden	High Burden
Strong (above 2.5)	Low Burden	Low Burden	Medium Burden

Estimated Financial Burden: High

(7) An assessment of any other relevant local community economic condition.

Livonia's population declined 41.3% from 1990-2010. In terms of economic strength, Putnam County is below average when compared to other counties in the State. The per capita income is 29.6% below the State's average.⁸

In terms of retail Sales, Putnam County loses retail customers from surrounding counties and the County residents spend less than the state average on retail goods and services. The buying power index of Putnam County residents is below average compared to the rest of the regional economy.⁷

Conclusion and Finding

The department is proposing modifications to the current operating permit that will require the WWTF to add Ammonia as N treatment. The department identified the actions for which an affordability analysis is required under Section 644.145 RSMo.

The department estimates that adding Ammonia as N treatment will cost the Public Water Supply District No. 1 of Putnam County, Missouri an estimated \$508,350 - \$1,566,800. Should this cost be financed through user fees, it may require user fees between 10.6% - 25.9% of the community's MHI. Considering that several of the economic factors show a weak financial capability in this community, this analysis concludes that the evaluated permit action will result in user fees above 2% of the community's median household income.

The Department considered all seven (7) of the criteria presented in subsection 644.145.3 when evaluating the affordability of the relevant actions. Taking into consideration these criteria, this analysis examined whether the above referenced permit modifications affects the ability of an individual customer or household to pay a utility bill without undue hardship or unreasonable sacrifice in the essential lifestyle or spending patterns of the individual or household. As a result of reviewing the above criteria, the Department hereby finds that the action described above will result in a high burden with regard to the community's overall financial capability and a high financial impact for most individual customers/households.

Reference Page

- ¹ Public Water Supply District No. 1 of Putnam County, Missouri Affordability Information Form
- ² Unemployment data from Missouri Department of Economic Development (September 2012) – <http://www.missourieconomy.org/pdfs/urel1202.pdf>
- ³ Median Household Income data from American Community Survey – Median income in the past 12 months – <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- ⁴ 2010 Census Population Data - <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
2000 Census Population Data - <http://www.census.gov/popest/data/cities/totals/2009/tables/SUB-EST2009-04-29.xls>
1990 Census Population Data - <http://www.census.gov/prod/cen1990/cp1/cp-1-27.pdf>
- ⁵ Poverty data – American Community Survey - <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- ⁶ CAPDEWORKS cost estimate summary.xls
- ⁷ <http://www.missourieconomy.org/indicators/wages/pci10county.stm>
- ⁸ http://www.missourieconomy.org/pdfs/nw_wia_retail_trade_analysis.pdf

no funds rec'd 2/8/12 B20



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
FORM B - APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR
FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE (≤100,000 gallons per
day) UNDER MISSOURI CLEAN WATER LAW

FOR AGENCY USE ONLY	
CHECK NUMBER	No Fee Required
DATE RECEIVED	2/16/12
FEE SUBMITTED	0

(P)

NOTE ► PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM

1. This application is for:

- An operating permit and antidegradation review public notice.
- A construction permit following an appropriate operating permit and antidegradation review public notice.
- A construction permit and a concurrent operating permit and antidegradation review public notice.
- A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required).
- An operating permit for a new or unpermitted facility. Construction Permit # _____
- An operating permit renewal: Permit #MO- 0121916 Expiration Date 03/22/2012
- An operating permit modification: Permit #MO- Reason: _____

RECEIVED
FEB 8 2012
US MAIL

1.1 Is this a Federal/State Funded Project? YES NO Funding Agency/Project #: _____
 1.2 Is the appropriate fee included with the application (See instructions for appropriate fee)? YES NO

2. FACILITY (Outfall of)

NAME Village of Livonia		TELEPHONE WITH AREA CODE	
ADDRESS (PHYSICAL) P.O. Box 11	CITY Livonia	STATE MO	ZIP CODE 63551
2.1 LEGAL DESCRIPTION: sw ¼, sw ¼, ¼, Sec. 27, T 66, R 16 Putnam County			
2.2 UTM Coordinates Easting (X): 524869 Northing (Y): 448371 For Universal Transverse Mercator (UTM) Zone 15 North referred to North American Datum 1983 (NAD83)			
2.3 Name of receiving stream: Old Channel Chariton River			

3. OWNER

NAME Village of Livonia		E-MAIL ADDRESS	TELEPHONE WITH AREA CODE
ADDRESS P.O. Box 11	CITY Livonia	STATE MO	ZIP CODE 63551
3.1 Request review of draft permit prior to Public Notice? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			

4. CONTINUING AUTHORITY: Permanent organization which will serve as the continuing authority for the operation, maintenance and modernization of the facility.

NAME Public Water Supply District No. 1 of Putnam County		TELEPHONE WITH AREA CODE (660) 947-3616	
ADDRESS 28421 US Hwy 136	CITY Unionville	STATE MO	ZIP CODE 63565

5. OPERATOR

NAME David Lloyd	CERTIFICATE NUMBER 5638	TELEPHONE WITH AREA CODE (660) 947-3616
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6. FACILITY CONTACT

NAME David Lloyd	TITLE Water Operator	TELEPHONE WITH AREA CODE (660) 947-3616
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7.0 ADDITIONAL FACILITY INFORMATION

7.1 Description of facilities (Attach additional sheet if required). Attach a 1" = 2,000' scale U.S. Geological Survey topographic map showing location of all outfalls and downstream landowners. (See Item 9.)

7.2 Facility SIC code: 4952; Discharge SIC code: _____; Facility NAICS code: _____; Discharge NAICS code: _____.

7.3 Number of people presently connected or population equivalent (P.E.) _____ Design P.E. _____
 Number of units presently connected: Homes 37 Trailers 4 Apartments _____ Other _____
 Design flow for this outfall: _____ Total design flow for the facility: 15500 Actual flow for this outfall: 0
 Commercial Establishment: Daily number of employees working _____ Daily number of customers/guests _____

7.4 Length of pipe in the sewer collection system? _____ feet/miles (Please denote which unit is appropriate.)

7.5 Does any bypassing occur in the collection system or at the treatment facility? Yes No (If yes, attach explanation.)

7.6 Does significant infiltration occur in the collection system? Yes No (If yes, attach explanation and proposed repair.)

7.7 Is industrial waste discharged to the facility identified in item 2? Yes No (If yes, see instructions.)

7.8 Will the discharge be continuous through the year? Yes No
 a. Discharge will occur during the following months: November March
 b. How many days of the week will the discharge occur? 7

7.9 Is wastewater land applied? Yes No (If yes, attach Form I.)

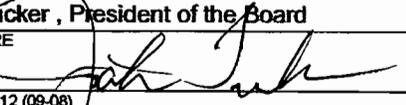
7.10 Will chlorine be added to the effluent? Yes No
 a. If chlorine is added, what is the resulting residual? _____ µg/l (micrograms per liter)

7.11 Does this facility discharge to a losing stream or sinkhole? Yes No

7.12 Attach a flow chart showing all influents, treatment facilities and outfalls.

7.13 Has a waste load allocation study been completed for this facility? Yes No

7.14 List all permit violations, including effluent limit exceedances in the last five years. Attach a separate sheet if necessary. If none, write none. None

8. SLUDGE HANDLING, USE AND DISPOSAL			
8.1 Is the sludge a hazardous waste as defined by 10 CSR 25? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
8.2 Sludge Production, including sludge received from others: <u>3.4</u> Design Dry Tons/Year <u> </u> Actual Dry Tons/Year			
8.3 Capacity of sludge holding structures: Sludge storage provided: <u> </u> cubic feet; <u> </u> days of storage; <u> </u> average percent solids of sludge; <input type="checkbox"/> No sludge storage is provided.			
8.4 Type of Storage: <input type="checkbox"/> Holding tank <input type="checkbox"/> Building <input type="checkbox"/> Basin <input checked="" type="checkbox"/> Other (Please describe) <u>Sludge is retained in the Lagoon</u> <input type="checkbox"/> Concrete Pad			
8.5 Sludge Treatment: <input type="checkbox"/> Anaerobic Digester <input checked="" type="checkbox"/> Lagoon <input type="checkbox"/> Composting <input type="checkbox"/> Storage Tank <input type="checkbox"/> Aerobic Digester <input type="checkbox"/> Other (Attach description) <input type="checkbox"/> Lime Stabilization <input type="checkbox"/> Air or Heat Drying			
8.6 Sludge Use or Disposal: <input type="checkbox"/> Land Application <input type="checkbox"/> Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years) <input type="checkbox"/> Contract Hauler <input type="checkbox"/> Incineration <input type="checkbox"/> Hauled to Another Treatment Facility <input checked="" type="checkbox"/> Sludge Retained in Wastewater treatment lagoon <input type="checkbox"/> Solid Waste Landfill <input type="checkbox"/> Other <u> </u> Attach explanation sheet.			
8.7 PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY <input type="checkbox"/> By Applicant <input type="checkbox"/> By Others (complete below)			
NAME N/A			
ADDRESS		CITY	STATE ZIP CODE
CONTACT PERSON		TELEPHONE WITH AREA CODE	PERMIT NO. MO-
8.8 SLUDGE USE OR DISPOSAL FACILITY <input type="checkbox"/> By Applicant <input type="checkbox"/> By Others (Please complete below.)			
NAME N/A			
ADDRESS		CITY	STATE ZIP CODE
CONTACT PERSON		TELEPHONE WITH AREA CODE	PERMIT NO. MO-
8.9 Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503? <input type="checkbox"/> Yes <input type="checkbox"/> No (Please attach explanation)			
9. DOWNSTREAM LANDOWNER (S). ATTACH ADDITIONAL SHEETS AS NECESSARY. SEE INSTRUCTIONS.			
NAME Clifford & Melba Blue Family Trust			
ADDRESS 46029 159th Street		CITY Livonia	STATE ZIP CODE MO 63551
10. DRINKING WATER SUPPLY INFORMATION			
10.1 WHAT IS THE SOURCE OF YOUR DRINKING WATER SUPPLY: A. Public supply (municipal or water district water) <u>District</u> If public, please give name of the public supply <u>Putnam co</u> B. Private well <u>None</u> C. Surface water (lake, pond or stream) <u>None</u>			
10.2 Does your drinking water source serve at least 25 people at least 60 days per year (not necessarily consecutive days)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
10.3 Does your supply serve housing which is occupied year round by the same people? This does not include housing which is occupied seasonally? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
11. I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law.			
NAME AND OFFICIAL TITLE (TYPE OR PRINT) Jack Tucker, President of the Board			TELEPHONE WITH AREA CODE (660) 947-3616
SIGNATURE 			DATE SIGNED <u>2-1-2012</u>