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-0022373
Owner: Liberty Utilities (Missouri Water) LLC
Address: 509 E Church Street, Aurora, MO 65605
Continuing Authority: Same as above
Address: Same as above
Facility Name: Bolivar WWTF
Facility Address: 1801 E. Broadway, Bolivar, MO 65613
Legal Description: NE ¼, SW ¼, Sec. 6, T33N, R22W, Polk County
UTM (X/Y): 465817 / 4163555
Receiving Stream: Town Branch of Piper Creek (P)
First Classified Stream and ID: Piper Creek (P) (01444) 303(d) list
USGS Basin & Sub-watershed No.: (10290107-0303)

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
Influent pumps, primary screening, grit removal, parallel oxidation ditches, two final clarifiers, ultraviolet light disinfection, sludge storage tanks. Sludge is land applied. Disinfection and New Outfall 001 will be installed and in operation prior to June 28, 2013.

This facility requires a Class B operator.
Design population equivalent is 25,365.
Design flow is 2.55 million gallons per day.
Actual flow is 1.4 million gallons per day.
Design sludge production is 533 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.

April 4, 2008 Effective Date
March 1, 2022 Modification Date
April 3, 2013 Expiration Date

Chris Wieberg, Director, Water Protection Program
Outfall S1 – Instream Monitoring
Existing Outfall 001, approximately 470 yards upstream of the new outfall 001
Legal Description: NW ¼, SW ¼, Sec. 6, T33N, R22W, Polk County
UTM(x, y): 465552 / 4163363
Receiving Stream: Town Branch of Piper Creek (P)  303(d)
First Classified Stream and ID: Town Branch of Piper Creek (P) (1444)
USGS Basin & Sub-watershed No.: (10290107-0303)

Outfall S2 – Instream Monitoring
Division Street Bridge, approximately 200 feet downstream of the new outfall 001
Legal Description: NE ¼, SW ¼, Sec. 6, T33N, R22W, Polk County
UTM(x, y): 465860 / 4163573
Receiving Stream: Town Branch of Piper Creek (P)  303(d)
First Classified Stream and ID: Town Branch of Piper Creek (P) (1444)
USGS Basin & Sub-watershed No.: (10290107-0303)
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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

<table>
<thead>
<tr>
<th>OUTFALL NUMBER AND EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>FINAL EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM</td>
<td>WEEKLY AVERAGE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outfall #001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow</td>
<td>MGD</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Biochemical Oxygen Demand₅</td>
<td>mg/L</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>mg/L</td>
<td>41</td>
<td>27</td>
</tr>
<tr>
<td>pH – Units</td>
<td>SU</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>E. coli (Note 1)</td>
<td>#/100 ml</td>
<td>1030</td>
<td>206</td>
</tr>
<tr>
<td>Ammonia as N</td>
<td>mg/L</td>
<td>3.7</td>
<td>1.4</td>
</tr>
<tr>
<td>(April 1 – Sept 30)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Oct 1 – March 31)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil &amp; Grease</td>
<td>mg/L</td>
<td>15</td>
<td>10</td>
</tr>
</tbody>
</table>

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE May 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 | once/year | 24 hr. composite

MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2008

<table>
<thead>
<tr>
<th>Outfall #S1 &amp; S2</th>
<th>Dissolved Oxygen</th>
<th>mg/L</th>
<th>*</th>
<th>once/quarter*** *</th>
<th>grab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Suspended Solids</td>
<td>mg/L</td>
<td>*</td>
<td>once/quarter****</td>
<td>grab</td>
<td></td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td>mg/L</td>
<td>*</td>
<td>once/quarter****</td>
<td>grab</td>
<td></td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td>mg/L</td>
<td>*</td>
<td>once/quarter****</td>
<td>grab</td>
<td></td>
</tr>
</tbody>
</table>

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2008

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREBE, 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.
** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.
*** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.
**** Sample once per quarter in the months of April, May, June, July, August, September, and October. Reports shall be submitted by the 28th day of the month following sample collection (eg. sample collected in April, report due by May 28th).

Note 1 - Final 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). Limits for E. Coli will become effective June 28, 2013.
C. INFLUENT MONITORING REQUIREMENTS

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:

<table>
<thead>
<tr>
<th>SAMPLING LOCATION AND PARAMETER(S)</th>
<th>UNITS</th>
<th>MEASUREMENT FREQUENCY</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biochemical Oxygen Demand₅</td>
<td>mg/L</td>
<td>once/month</td>
<td>24 hr. composite**</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>mg/L</td>
<td>once/month</td>
<td>24 hr. composite**</td>
</tr>
</tbody>
</table>

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

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 area-wide wastewater treatment system within 90 days of notice of its availability.

4. 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.

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

6. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities
   (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
D. SPECIAL CONDITIONS (continued)

(b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids. Permit Standard Conditions, Part III shall apply to the land application of biosolids. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

7. 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 operational monitoring frequencies listed in 10 CSR 20-9. If a modification of the operational 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.

8. **Wet Weather Bypass Sampling** – A sample shall be collected of each discharge during a bypass event at the treatment facility, including shut down of rotors on oxidation ditches. Each bypass discharge shall be analyzed for Biochemical Oxygen Demand and Total Suspended Solids. If the rotors are shut off, sampling shall occur immediately before the rotors are turned back on. The data shall be reported on the monthly Discharge Monitoring Reports. This condition does not apply to dry weather bypass events, which shall be reported in accordance with Standard Conditions Part 1, Section B, item 2.

9. The permittee shall develop and implement a program for maintenance and repair of the collection system.

10. The City is allowed to discharge at the existing outfall 001 until the new outfall is completed and placed in operation by June 28, 2013.

11. 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.

12. Whole Effluent Toxicity (WET) tests shall be conducted as follows:

<table>
<thead>
<tr>
<th>SUMMARY OF WET TESTING FOR THIS PERMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTFALL</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>001</td>
</tr>
</tbody>
</table>

(a) Test Schedule and Follow-Up Requirements
   (1) Perform a SINGLE-dilution 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.
D. SPECIAL CONDITIONS (continued)

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.

(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), 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 least two multiple-dilution tests during any period of accelerated monitoring violates the permit narrative requirement for aquatic life protection.

(5) The permittee shall submit a concise summary of all test results for the test series 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.
D. SPECIAL CONDITIONS (continued)

(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) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department’s WET test report form that was generated during the reporting period.

(10) Submit a concise summary in tabular format of all test results with the annual report.

(b) PASS/FAIL procedure and effluent limitations:
   (1) To pass a single-dilution test, 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 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.

   (2) 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) When dilutions are required, 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) Single-dilution tests will be run with:
      (a) Effluent at the AEC concentration;
      (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) 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;
      (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.
   (8) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
   (9) 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**: $25 \pm 1^\circ C$ Temperatures shall not deviate by more than $3^\circ C$ 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 $p< 0.05$)
- **Test acceptability criterion**: 90% or greater survival in controls

Test conditions for (Pimephales promelas):

- **Test duration**: 48 h
- **Temperature**: $25 \pm 1^\circ C$ Temperatures shall not deviate by more than $3^\circ C$ 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 $p< 0.05$)
- **Test Acceptability criterion**: 90% or greater survival in controls
E. RECEIVING WATER MONITORING CONDITIONS

1. Instream samples should be taken at the established locations noted on page 2. In the event that a safe, accessible location is not present at this location, a suitable location can be negotiated with the department. Samples should be taken at least four feet from the bank or from the middle of the stream (whichever is less) and 6-inches below the surface. The upstream receiving water sample should be collected at a point upstream from any influence of the effluent, where the water is visibly flowing down stream.

2. When conducting in-stream monitoring, the permittee shall record observations that include: the time of day, weather conditions, unusual stream/lake characteristics (e.g., septic conditions, algae growth, etc.), the stream segment (e.g., riffle, pool or run) or the lake depth from where the sample was collected. These observations shall be submitted with the sample results.

3. Samples shall not be collected from areas with especially turbulent flow, still water or from the stream bank, unless these conditions are representative of the stream reach or no other areas are available for sample collection. Sampling should not be made when significant precipitation has occurred recently. The sampling event should be terminated and rescheduled if any of the following conditions occur:
   - If turbidity in the stream increases notably; or
   - If rainfall over the past two weeks exceeds 2.5 inches or exceeds 1 inch in the last 24 hours

4. Always use the correct sampling technique and handling procedure specified for the parameter of interest. Please refer to the latest edition of Standard Methods for the Examination of Water and Wastewater for further discussion of proper sampling techniques. All analyses must be conducted in accordance with an approved EPA method. Meters shall be calibrated immediately (within 1 hour) prior to the sampling event.

5. To obtain accurate measurements, D.O., temperature and pH analyses should be performed on-site in the receiving stream where possible. However, due to high flow conditions, access, etc., it may be necessary to collect a sample in a bucket or other container. When this is necessary, care must be taken not to aerate the sample upon collection. If for any reason samples must be collected from an alternate site from the one listed in the permit, the permittee shall report the location with the sample results.

6. Dissolved oxygen measurements are to be taken during the period from one hour prior to sunrise to one and one-half hour after sunrise.

7. Please contact the department if you need additional instructions or assistance.
MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATEMENT OF BASIS
MO-0022373
BOLIVAR WWTF

This Statement of Basis (Statement) gives pertinent information regarding minor modification(s) to the above listed operating permit without the need for a public comment process. A Statement is not an enforceable part of a Missouri State Operating Permit.

Part I – Facility Information

Facility Type: Non-POTW
Facility Description: Influent pumps, primary screening, grit removal, parallel oxidation ditches, two final clarifiers, ultraviolet light disinfection, sludge storage tanks. Sludge is land applied. Disinfection and New Outfall 001 will be installed and in operation prior to June 28, 2013.

Part II – Modification Rationale

This operating permit is hereby modified to reflect a change in ownership and continuing authority from City of Bolivar to Liberty Utilities (Missouri Water) LLC.

No other changes were made at this time.

Part III – 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.

DATE OF STATEMENT OF BASIS: MARCH 1, 2022

COMPLETED BY:

ASHLEY KNEEMUELLER, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(573) 526-1503
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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 Address: | 1801 East Broadway, Bolivar, MO 65613 |
| Facility Type:    | POTW |
| Facility SIC Code(s): | 4952 |

Facility Description: 2.5 MGD. Influent pumps, primary screening, grit removal, parallel oxidation ditches, two final clarifiers, ultraviolet light disinfection, sludge storage tanks. Sludge is land applied.

Last Inspection: July 24, 2012  In Compliance ☐; Non-Compliance ☑

The Inspection Report documented the failure of the City of Bolivar to comply with effluent limitations, inadequate laboratory procedures, failure to properly operate and maintain the wastewater treatment facility, and reported Sanitary Sewer Overflows.

**CERTIFIED OPERATOR**

This facility requires a class B operator. Score = 52

**OUTFALL(S) TABLE:**

<table>
<thead>
<tr>
<th>OUTFALL</th>
<th>DESIGN FLOW (CFS)</th>
<th>TREATMENT LEVEL</th>
<th>EFFLUENT TYPE</th>
<th>DISTANCE TO CLASSIFIED SEGMENT (MI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>3.95</td>
<td>Secondary</td>
<td>Domestic, Municipal</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Comments:**

This is for a modification to include ultraviolet (UV) disinfection system and relocation of the outfall 001 approximately 1,400 feet downstream from the existing location. A draft of the MSOP for UV disinfection was placed on public notice on November 18, 2011 and ended December 18, 2011. No comment was received during the public notice and the construction permit CP000991 for the UV system was issued on December 29, 2011. Since the revised plans and specifications on August 10, 2012 for the redesigned of the UV disinfection also include the relocation of outfall 001 and since relocation of the outfall is considered a major modification, this operating permit is placed back for public comment. The outfall is to be removed from its current location so that additional hydraulic head can be available for gravity discharge through the current UV disinfection equipment and the future filtration process to address potential phosphorus limitations.
Outfall #001
Legal Description: NE ¼, SW ¼, Sec. 6, T33N, R22W, Polk County
UTM(x, y): 465817 / 4163555
Receiving Stream: Town Branch of Piper Creek (P) 303(d)
First Classified Stream and ID: Town Branch of Piper Creek (P) (1444)
USGS Basin & Sub-watershed No.: (10290107-0303)

Outfall S1 – Instream Monitoring
Old Outfall 001, approximately 470 yards upstream of the new outfall 001
Legal Description: NW ¼, SW ¼, Sec. 6, T33N, R22W, Polk County
UTM(x, y): 465552 / 4163363
Receiving Stream: Town Branch of Piper Creek (P) 303(d)
First Classified Stream and ID: Town Branch of Piper Creek (P) (1444)
USGS Basin & Sub-watershed No.: (10290107-0303)

Outfall S2 – Instream Monitoring
Division Street Bridge, approximately 200 feet downstream of the new outfall 001
Legal Description: NE ¼, SW ¼, Sec. 6, T33N, R22W, Polk County
UTM(x, y): 465860 / 4163573
Receiving Stream: Town Branch of Piper Creek (P) 303(d)
First Classified Stream and ID: Town Branch of Piper Creek (P) (1444)
USGS Basin & Sub-watershed No.: (10290107-0303)

Part II – 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.

Please mark the correct designated waters of the state categories of the receiving stream.

<table>
<thead>
<tr>
<th>Designated Waters of the State</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missouri or Mississippi River [10 CSR 20-7.015(2)]:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Lake or Reservoir [10 CSR 20-7.015(3)]:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Losing [10 CSR 20-7.015(4)]:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Metropolitan No-Discharge [10 CSR 20-7.015(5)]:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Special Stream [10 CSR 20-7.015(6)]:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Subsurface Water [10 CSR 20-7.015(7)]:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>All Other Waters [10 CSR 20-7.015(8)]:</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

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:
The classified receiving stream described in state regulations is erroneously called Piper Creek until its confluence with the real Piper Creek. Please see the “Total Maximum Daily Load Information Sheet” attached at the end of this Fact Sheet for full details.

<table>
<thead>
<tr>
<th>Waterbody Name</th>
<th>Class</th>
<th>WBID</th>
<th>Designated Uses*</th>
<th>8-Digit HUC</th>
<th>EDU**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town Branch of Piper Creek</td>
<td>P</td>
<td>1444</td>
<td>AQL, LWW, WBC-B***</td>
<td>10290107</td>
<td>Ozark/Osage</td>
</tr>
</tbody>
</table>

* - 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).

** - Ecological Drainage Unit
RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

<table>
<thead>
<tr>
<th>RECEIVING STREAM (U, C, P)</th>
<th>LOW-FLOW VALUES (CFS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1Q10</td>
<td>7Q10</td>
</tr>
<tr>
<td>Town Branch of Piper Creek (P)</td>
<td>0.1</td>
</tr>
</tbody>
</table>

MIXING CONSIDERATIONS TABLE:

<table>
<thead>
<tr>
<th>MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4.B.(II)(a)]</th>
<th>ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)4.B.(II)(b)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1Q10</td>
<td>1Q10</td>
</tr>
<tr>
<td>7Q10</td>
<td>7Q10</td>
</tr>
<tr>
<td>30Q10</td>
<td>30Q10</td>
</tr>
<tr>
<td>0.025</td>
<td>0.025</td>
</tr>
<tr>
<td>0.025</td>
<td>0.0025</td>
</tr>
<tr>
<td>0.25</td>
<td>0.0025</td>
</tr>
<tr>
<td>0.25</td>
<td>0.025</td>
</tr>
</tbody>
</table>

RECEIVING STREAM MONITORING REQUIREMENTS:

Site S1. (Upstream)

<table>
<thead>
<tr>
<th>PARAMETER(S)</th>
<th>SAMPLING FREQUENCY</th>
<th>SAMPLE TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissolved Oxygen</td>
<td>once/quarter</td>
<td>grab</td>
<td>Old Outfall 001, approximately 470 yards upstream of the new outfall 001</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Site S2. (Downstream)

<table>
<thead>
<tr>
<th>PARAMETER(S)</th>
<th>SAMPLING FREQUENCY</th>
<th>SAMPLE TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissolved Oxygen</td>
<td>once/quarter</td>
<td>grab</td>
<td>Division Street Bridge, approximately 200 feet downstream of the new outfall 001</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The closest cross road where the City would have access is approximately 200 feet downstream of the outfall. The next closest public access road that crosses this waterway is approximately 7,000 feet downstream. The property along the waterway in between is privately owned. Therefore, the 200 feet downstream location was chosen.

Part III – 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 Factsheet are at least as protective as those previously established; therefore, backsliding does not apply.

ANTIDEGRADATION:

In accordance with Missouri’s Water Quality Standard [10 CSR 20-7.031(2)], the department is to document by means of Antidegradation Review that the use of a water body’s available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.
- Applicable; Please see the file for the completed antidegradation waiver signed by the engineer of record and owner for the installation of ultraviolet light disinfection system and Antidegradation Applicability Review for City of Bolivar WWTF letter dated December 11, 2012.

**APPLICABLE PERMIT PARAMETERS:**
Effluent parameters contained in Factsheets and Missouri State Operating Permits are obtained from Technology Based Effluent Limit (TBEL), Missouri’s Effluent Regulations [10 CSR 20-7.015], Missouri’s Water Quality Standards [10 CSR 20-7.031], previous Missouri State Operating Permits, and from Operating Permit Applications.

**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.

Applicable (renewal and modifications to existing operating permits)

This facility has been approved to land apply as per Permit Standard Conditions III and a department approved bio-solids management plan.

**COMPLIANCE AND ENFORCEMENT:**
Action taken by the department to resolve violations of the Missouri Clean Water Law, its implementing regulations, and/or any terms and condition of an operating permit.

Applicable

The permittee/facility is currently under enforcement action with the U.S. EPA.

**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

At this time, the permittee is not required to implement and enforce a Pretreatment Program.

**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.

Not Applicable

A RPA was not conducted for this facility.

**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

Applicable

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.

Not Applicable ☑;
This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

The City is required under an administrative order from the U.S. EPA to reduce I&I. The order has specific requirements and a timeline for accomplishing those requirements.

SCHEDULE OF COMPLIANCE (SOC):
A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Not Applicable ☑;

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.

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 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:

\[
C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)}
\]

(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.

**WHOLE EFFLUENT TOXICITY (WET) TEST:**

As per [10 CSR 20-7.031(1)(CC)], a toxicity test conducted under specified laboratory conditions on specific indicator organism; and as per [40 CFR Part 122.2], the aggregate toxic effect of an effluent measured directly by a toxicity test.

Applicable ☒;

Effective July 15, 2005, upon revision, renewal, modification, or issuance, all Missouri State Operating Permits under the NPDES will incorporate use of the following guidelines for determining the applicability and requirements for WET testing. WET testing requirements are established by the WET Test Policy, Section 308 of the Federal Water Pollution Control Act, and [40 CFR § 136]. Please check WET tests applicability for this facility:

- All major discharge facilities ☐;
- Facilities that are exceeding or routinely exceed their design flow ☑;
- Most municipals, domestic sewage dischargers ☐;
- Industrial dischargers or other dischargers that may alter their production processes throughout the year ☐;
- Facilities that may handle large quantities of toxic substances, or substances that are toxic in large amounts ☐; and
- Facilities that have been granted seasonal relief of numeric limitations ☐.

**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 ☒;

Piper Creek (Town Branch) is listed on the 1998 and 2006 Missouri 303(d) Lists for organic sediment and unknown pollutants, respectively. Please see the “Total Maximum Daily Load Information Sheet” attached at the end of this Fact Sheet for full details.

☒ – This facility is considered to be one of the sources of the above listed pollutant(s) or considered to contribute to the impairment. New waste load allocations may be developed as part of a TMDL. Major contributions to the impairment are believed to be from upstream sources within Bolivar city limits. Once these are determined and addressed, necessary action at the treatment facility will be determined.
### Part IV – Effluent Limits Determination

**Outfall #001 – Main Facility Outfall**

#### Effluent Limitations Table:

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>UNIT</th>
<th>BASIS FOR LIMITS</th>
<th>DAILY MAXIMUM</th>
<th>WEEKLY AVERAGE</th>
<th>MONTHLY AVERAGE</th>
<th>MODIFIED</th>
<th>PREVIOUS PERMIT LIMITATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLOW</td>
<td>GPD</td>
<td>1</td>
<td>*</td>
<td>*</td>
<td>NO</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>BOD$_5$</td>
<td>MG/L</td>
<td>1</td>
<td>45</td>
<td>30</td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TSS</td>
<td>MG/L</td>
<td>1, 3</td>
<td>41</td>
<td>27</td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH (S.U.)</td>
<td>SU</td>
<td>1</td>
<td>6.6 - 9.0</td>
<td>6.5 - 9.0</td>
<td>YES</td>
<td>6.0 - 9.0</td>
<td></td>
</tr>
<tr>
<td>TEMPERATURE (ºC)</td>
<td>°C</td>
<td>Removed</td>
<td>--</td>
<td>--</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMMONIA AS N (APRIL 1 – SEPT. 31)</td>
<td>MG/L</td>
<td>2, 3</td>
<td>3.7</td>
<td>1.4</td>
<td>YES FOR MAY 1 – OCT. 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMMONIA AS N (OCT. 1 – MARCH 31)</td>
<td>MG/L</td>
<td>2, 3</td>
<td>8.1</td>
<td>3.1</td>
<td>YES FOR NOV 1 – APRIL 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FECAL COLIFORM</td>
<td>**</td>
<td>REMOVED</td>
<td>--</td>
<td>--</td>
<td>YES 1000/400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. COLI</td>
<td>**</td>
<td>1, 2, 3</td>
<td>1030</td>
<td>206</td>
<td>YES ***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OIL &amp; GREASE (MG/L)</td>
<td>MG/L</td>
<td>2, 3</td>
<td>15</td>
<td>10</td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHOLE EFFLUENT TOXICITY (WET TEST)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Please see WET Test in the Derivation and Discussion Section below.</td>
</tr>
</tbody>
</table>

* - Monitoring requirement only.
** - # of colonies/100mL; the Monthly Average for Fecal Coliform is a geometric mean.
*** - Parameter not previously established in previous state operating permit.

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

**OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Biochemical Oxygen Demand (BOD$_5$).** 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.** No change has been proposed in this modification.

- **Total Suspended Solids (TSS).** Effluent limitations have been retained from previous state operating permit. No change has been proposed in this modification.

- **pH.** pH is limited to the range of 6.5 – 9.0 pH units, as per [10 CSR 20-7.031(4)(E)]. pH is measured in pH units and is not to be averaged.

- **Temperature.** Temperature has been removed because it is no longer pertinent in determining ammonia limitations.

- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L.

<table>
<thead>
<tr>
<th>Season</th>
<th>Temp (ºC)</th>
<th>pH (SU)</th>
<th>Total Ammonia Nitrogen CCC (mg/L)</th>
<th>Total Ammonia Nitrogen CMC (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer</td>
<td>26</td>
<td>7.8</td>
<td>1.5</td>
<td>12.1</td>
</tr>
<tr>
<td>Winter</td>
<td>6</td>
<td>7.8</td>
<td>3.1</td>
<td>12.1</td>
</tr>
</tbody>
</table>

Summer: April 1 – September 30, Winter: October 1 – March 31
Summer: April 1 – September 30

Chronic WLA: \[ C_e = \frac{(3.95 + 0.25)\times 1.5 - (0.25 \times 0.01)}{3.95} \]
\[ C_e = 1.6 \text{ mg/L} \]

Acute WLA: \[ C_e = \frac{(3.95 + 0.0025)\times 12.1 - (0.0025 \times 0.01)}{3.95} \]
\[ C_e = 12.1 \text{ mg/L} \]

\[ \text{LTAa} = 1.6 \text{ mg/L (0.780) = 1.2 mg/L [CV = 0.6, 99\text{th Percentile, n = 30}]} \]
\[ \text{LTAa} = 12.1 \text{ mg/L (0.321) = 3.9 mg/L [CV = 0.6, 99\text{th Percentile}]} \]
\[ \text{MDL} = 1.2 \text{ mg/L * 3.11 = 3.7 mg/L [CV = 0.6, 99\text{th Percentile}]} \]
\[ \text{AML} = 1.2 \text{ mg/L * 1.19 = 1.4 mg/L [CV = 0.6, 95\text{th Percentile, n = 30}]} \]

Winter: October 1 – March 31

Chronic WLA: \[ C_e = \frac{(3.95 + 0.25)\times 3.1 - (0.25 \times 0.01)}{3.95} \]
\[ C_e = 3.3 \text{ mg/L} \]

Acute WLA: \[ C_e = \frac{(3.95 + 0.0025)\times 12.1 - (0.0025 \times 0.01)}{3.95} \]
\[ C_e = 12.1 \text{ mg/L} \]

\[ \text{LTAa} = 3.3 \text{ mg/L (0.780) = 2.6 mg/L [CV = 0.6, 99\text{th Percentile, n = 30}]} \]
\[ \text{LTAa} = 12.1 \text{ mg/L (0.321) = 3.9 mg/L [CV = 0.6, 99\text{th Percentile}]} \]
\[ \text{MDL} = 2.6 \text{ mg/L * 3.11 = 8.1 mg/L [CV = 0.6, 99\text{th Percentile}]} \]
\[ \text{AML} = 2.6 \text{ mg/L * 1.19 = 3.1 mg/L [CV = 0.6, 95\text{th Percentile, n = 30}]} \]

- **Fecal Coliform.** *E. Coli* has replaced fecal coliform at the applicable bacteria in Missouri’s water quality standards.

- **Escherichia coli (E. coli).** Monthly average of 206 per 100 ml as a geometric mean and Weekly Average of 1030 during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (B) designated use of the receiving stream, 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. No change has been proposed in this modification.

- **WET Test.** No change to the Wet Test has been proposed in this modification. Whole Effluent Toxicity test shall be conducted as follows:

<table>
<thead>
<tr>
<th>Outfall</th>
<th>A.E.C. %</th>
<th>Frequency</th>
<th>Sample Type</th>
<th>Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>100</td>
<td>Once/year</td>
<td>24 hr. composite</td>
<td>September</td>
</tr>
</tbody>
</table>

**PART V: Finding of Affordability**

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

- Not Applicable; The Department is not required to determine findings of affordability because the permit contains no new conditions or requirements that convey a new cost to the facility.
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.

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

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 requestor 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 January 11, 2013 to February 10, 2013. Responses received were beyond the scope of this modification and will be considered at the renewal of this permit.


COMPLETED BY:

Sieu T. Dang, P.E.,
WP Permitting and Assistance Unit
(417) 891-4300
Sieu.dang@dnr.mo.gov
# APPENDIX #A - CLASSIFICATION WORKSHEET:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>POINTS POSSIBLE</th>
<th>POINTS ASSIGNED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximum Population Equivalent (P.E.) served (Max 10 pts.)</strong></td>
<td>1 pt./10,000 PE or major fraction thereof.</td>
<td>3</td>
</tr>
<tr>
<td><strong>Maximum: 10 pt Design Flow (avg. day) or peak month; use greater</strong></td>
<td>1 pt. / MGD or major fraction thereof.</td>
<td>3</td>
</tr>
<tr>
<td>(Max 10 pts.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missouri or Mississippi River</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>All other stream discharges except to losing streams and stream</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>reaches supporting whole body contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge to lake or reservoir outside of designated whole body</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>contact recreational area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge to losing stream, or stream, lake or reservoir area</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>supporting whole body contact recreation</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PRELIMINARY TREATMENT – Headworks</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screening and/or comminution</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Grit removal</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Plant pumping of main flow (lift station at the headworks)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>PRIMARY TREATMENT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary clarifiers</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Combined sedimentation/digestion</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Chemical addition (except chlorine, enzymes)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Push – button or visual methods for simple test such as pH,</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Settleable solids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional procedures such as DO, CO2, BOD, titrations, solids,</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>volatile content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More advanced determinations such as BOD seeding procedures,</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>fecal coliform, nutrients, total oils, phenols, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highly sophisticated instrumentation, such as atomic absorption and</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>gas chromatograph</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ALTERNATIVE FATE OF EFFLUENT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct reuse or recycle of effluent</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Land Disposal – low rate</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>High rate</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Overland flow</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Total from page ONE (1)</strong></td>
<td>----</td>
<td>20</td>
</tr>
</tbody>
</table>
## APPENDIX #A - CLASSIFICATION WORKSHEET (CONTINUED):

<table>
<thead>
<tr>
<th>Item</th>
<th>Points Possible</th>
<th>Points Assigned</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VARIATION IN RAW WASTE</strong> (highest level only) (DMR exceedances and Design Flow exceedances)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variation do not exceed those normally or typically expected</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Recurring deviations or excessive variations of 100 to 200% in strength and/or flow</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Recurring deviations or excessive variations of more than 200% in strength and/or flow</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Raw wastes subject to toxic waste discharge</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>SECONDARY TREATMENT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trickling filter and other fixed film media with secondary clarifiers</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Stabilization ponds without aeration</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Aerated lagoon</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Advanced Waste Treatment Polishing Pond</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Chemical/physical – without secondary</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Chemical/physical – following secondary</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Biological or chemical/biological</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Carbon regeneration</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>DISINFECTION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorination or comparable</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Dechlorination</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>On-site generation of disinfectant (except UV light)</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>UV light</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>SOLIDS HANDLING - SLUDGE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solids Handling Thickening</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Anaerobic digestion</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Aerobic digestion</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Evaporative sludge drying</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Mechanical dewatering</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Solids reduction (incineration, wet oxidation)</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Land application</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Total from page <strong>TWO (2)</strong></td>
<td>----</td>
<td>32</td>
</tr>
<tr>
<td>Total from page <strong>ONE (1)</strong></td>
<td>---</td>
<td>20</td>
</tr>
<tr>
<td>Grand Total</td>
<td>---</td>
<td>52</td>
</tr>
</tbody>
</table>

- A: 71 points and greater
- B: 51 points – 70 points
- C: 26 points – 50 points
- D: 0 points – 25 points
Missouri Department of Natural Resources
Total Maximum Daily Load Information Sheet

Town Branch of Piper Creek (or Piper Creek)

Water Body Segment at a Glance:

County: Polk
Nearby Cities: Bolivar
Length of impairment: 0.5 miles
Pollutant: Volatile Suspended Solids (VSS)
Source: Bolivar Wastewater Treatment Facility (WWTF)

TMDL Priority Ranking: High

Description of the Problem
Beneficial uses of Piper Creek
• Livestock and Wildlife Watering
• Protection of Warm Water Aquatic Life
• Human Health Protection (Fish Consumption)
• Whole Body Contact Recreation – Category B

Use that is impaired
• Protection of Warm Water Aquatic Life

Standards that apply
• Standards for Volatile Suspended Solids may be found in the general criteria section of the Missouri Water Quality Standards (WQS), 10 CSR 20-7.031(3)(A) and (C) where it states:
  - 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.
  - Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.

Background Information and Water Quality Data
Town Branch of Piper Creek is called Piper Creek on the 303(d) list. This is due to an error regarding its location as listed in the WQS and will be corrected to Town Branch in a future WQS revision. The creek was placed on the 303(d) list because it showed an accumulation of “objectionable solids” downstream from the Bolivar Wastewater Treatment Facility (WWTF) in 1993. Volatile suspended
solids (VSS) refer to organic (not sand or mineral) particles that are suspended in water, like algae, or those that settle out, like the sewage sludge in Piper Creek. When these solids settle onto the streambed, they smother natural substrates (materials in the streambed), aquatic invertebrate animals (like crayfish and water insects) and fish eggs.

Three studies by the department of deposition of solids in Town Branch and Piper Creek began in 2003. Two of the studies characterize the impacts to the stream related to fine sediment deposition and organic solids. One was completed in 2004 and the other in 2006 (data are shown in the Table 2). While the 2004 results did not indicate a significant VSS impairment due to the treatment plant, the 2006 results did. The notable differences during both survey periods between the upstream and downstream (of the WWTF) sites in Town Branch indicate that the WWTF is a significant source of impairment. One possible explanation for this difference is the relatively lower streams flow in the 2006 study compared to the 2004 study. Lower stream flows allow more buildup of solid material over time, intensifying the VSS impairment. The bioassessment portion of the studies indicates the aquatic community is somewhat impaired due to the WWTF. The scores in Table 1 are stream condition index (SCI) scores. Streams with scores of 14 or lower are considered impaired. The sediment studies also reported heavy growth of algae both up and downstream of the plant, indicating the WWTF is not the only source of the impairment.

Therefore, the TMDL will need to identify other possible sources of nutrients (the likely cause of the excess algal growth), besides the WWTF. These would be nonpoint sources (from stormwater runoff in general) and could include fertilizer from lawns and agricultural lands or leaking septic systems, among many other things. The bioassessment study recommends the use of best management practices inside and outside of Bolivar city limits of to help control nonpoint source pollution. The local community within the Piper Creek watershed has organized as the Bolivar Community Watershed Improvement Group (BC WIG) to find ways to remediate the problem(s). Some of the actions they have taken so far include removing the city compost pile from the creek’s flood plain and having the creek tested for bacteria. High levels were found upstream, as well as downstream, of the WWTF. The group has also formulated a monitoring plan for Town Branch and Piper Creek, which they are using to collect more data so they can more accurately identify sources of nutrients.

Table 1. Aquatic Invertebrate Community Scores from the Bioassessment

<table>
<thead>
<tr>
<th>Location</th>
<th>WBID</th>
<th>Based on EDU</th>
<th>Reference Streams</th>
<th>Based on Local</th>
<th>Small Streams</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Fall 2003</td>
<td>Spring 2004</td>
<td>Fall 2003</td>
<td>Spring 2004</td>
</tr>
<tr>
<td>Piper Cr. above Town Br. U</td>
<td>1444</td>
<td>14</td>
<td>8</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Town Br. 0.1 mi. above Bolivar WWTP</td>
<td>1444</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Town Br. 0.5 mi. below Bolivar WWTP</td>
<td>1444</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Piper Cr. 1.7 mi. below Bolivar WWTP</td>
<td>1444</td>
<td>14</td>
<td>12</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Note: Using either the Ecological Drainage Unit (EDU) or Local Reference Streams, 6 of 6 scores are 14 or less. This does not include the scores for the Unclassified part of Piper Creek (U). The Listing Methodology Document states that for 7 or fewer scores, at least 75% of the scores must be 14 or less for the water to be judged impaired. Based this criterion and the above scores, the 1.8 mile segment of WBID 1444 (from 0.1 mile upstream of the Bolivar WWTF to 1.7 miles downstream of the WWTF) is judged to be impaired.
### Table 2. Results from the “Sediment” Studies, 2004-2006

<table>
<thead>
<tr>
<th>Year</th>
<th>Mo</th>
<th>BOD</th>
<th>TSS</th>
<th>VSS</th>
<th>BOD</th>
<th>TSS</th>
<th>VSS</th>
<th>BOD</th>
<th>TSS</th>
<th>VSS</th>
<th>BOD</th>
<th>TSS</th>
<th>VSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>3</td>
<td>69</td>
<td>7760</td>
<td>670</td>
<td>46</td>
<td>1520</td>
<td>160</td>
<td>69</td>
<td>2730</td>
<td>250</td>
<td>60</td>
<td>1410</td>
<td>210</td>
</tr>
<tr>
<td>2004</td>
<td>3</td>
<td>50</td>
<td>860</td>
<td>85</td>
<td>70</td>
<td>2110</td>
<td>250</td>
<td>69</td>
<td>1870</td>
<td>320</td>
<td>69</td>
<td>2390</td>
<td>250</td>
</tr>
<tr>
<td>2004</td>
<td>3</td>
<td>67</td>
<td>11200</td>
<td>880</td>
<td>61</td>
<td>1670</td>
<td>160</td>
<td>69</td>
<td>2080</td>
<td>330</td>
<td>48</td>
<td>352</td>
<td>76</td>
</tr>
<tr>
<td>2004</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>5</td>
<td>32</td>
<td>25100</td>
<td>330</td>
<td>21</td>
<td>1150</td>
<td>128</td>
<td>80</td>
<td>12400</td>
<td>2930</td>
<td>36</td>
<td>3680</td>
<td>330</td>
</tr>
<tr>
<td>2004</td>
<td>5</td>
<td>31</td>
<td>1620</td>
<td>176</td>
<td>42</td>
<td>1060</td>
<td>128</td>
<td>47</td>
<td>47200</td>
<td>1530</td>
<td>42</td>
<td>5300</td>
<td>176</td>
</tr>
<tr>
<td>2004</td>
<td>5</td>
<td>40</td>
<td>32000</td>
<td>1860</td>
<td>52</td>
<td>2700</td>
<td>320</td>
<td>53</td>
<td>13200</td>
<td>880</td>
<td>30</td>
<td>23400</td>
<td>1860</td>
</tr>
<tr>
<td>2005</td>
<td>7</td>
<td>208</td>
<td>44400</td>
<td>4580</td>
<td>38</td>
<td>2790</td>
<td>310</td>
<td>41</td>
<td>47400</td>
<td>540</td>
<td>143</td>
<td>3840</td>
<td>530</td>
</tr>
<tr>
<td>2005</td>
<td>7</td>
<td>207</td>
<td>33000</td>
<td>3580</td>
<td>214</td>
<td>11600</td>
<td>1290</td>
<td>213</td>
<td>13600</td>
<td>3000</td>
<td>119</td>
<td>3400</td>
<td>490</td>
</tr>
<tr>
<td>2005</td>
<td>7</td>
<td>210</td>
<td>42800</td>
<td>4270</td>
<td>67</td>
<td>5120</td>
<td>545</td>
<td>418</td>
<td>20300</td>
<td>3690</td>
<td>113</td>
<td>5520</td>
<td>530</td>
</tr>
<tr>
<td>2005</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>2006</td>
<td>3</td>
<td>606</td>
<td>22200</td>
<td>4040</td>
<td>191</td>
<td>4860</td>
<td>680</td>
<td>1980</td>
<td>17600</td>
<td>5020</td>
<td>735</td>
<td>7960</td>
<td>1620</td>
</tr>
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Site index for the map on the next page.

**Site Index**

1-Just upstream of Bolivar WWTF outfall
2-Approximately 0.33 mile downstream of WWTF
3-Piper Ck. approx. 1.2 miles upstream of Town Br. at 435th Rd.
4-Piper Ck. approx. 0.44 mile below Town Branch at 425th Road
Impaired Segment of Town Branch of Piper Creek in Polk County, Missouri

For more information call or write:
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176, Jefferson City, MO 65102-0176
1-800-361-4827 or (573) 751-1300 office
(573) 522-9920 fax
PART I - GENERAL CONDITIONS
SECTION A - MONITORING AND REPORTING

1. Representative Sampling
   a. Samples and measurements taken as required herein shall be representative of the nature and volume, respectively, of the monitored discharge. All samples shall be taken at the outfall(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
   b. Monitoring results shall be recorded and reported on forms provided by the Department, postmarked no later than the 28th day of the month following the completed reporting period. Signed copies of these, and all other reports required herein, shall be submitted to the respective Department Regional Office, the Regional Office address is indicated in the cover letter transmitting the permit.

2. Schedule of Compliance
   No later than fourteen (14) calendar days following each date identified in the “Schedule of Compliance”, the permittee shall submit to the respective Department Regional Office as required therein, either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements, or if there are no more scheduled requirements, when such noncompliance will be corrected. The Regional Office address is indicated in the cover letter transmitting the permit.

3. Definitions
   Definitions as set forth in the Missouri Clean Water Law and Missouri Clean Water Commission Definition Regulation 10 CSR 20-2.010 shall apply to terms used herein.

4. Test Procedures
   Test procedures for the analysis of pollutant shall be in accordance with the Missouri Clean Water Commission Effluent Regulation 10 CSR 20-7015.

5. Recording of Results
   a. For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:
      (i) the date, exact place, and time of sampling or measurements;
      (ii) the individual(s) who performed the sampling or measurements;
      (iii) the date(s) analyses were performed;
      (iv) the individual(s) who performed the analyses;
      (v) the analytical techniques or methods used; and
      (vi) the results of such analyses.
   b. The Federal Clean Water Act provides that anyone who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six (6) months per violation, or both.
   c. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

6. Additional Monitoring by Permittee
   If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Monitoring Report Form. Such increased frequency shall also be indicated.

7. Records Retention
   The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recording for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at anytime.

SECTION B - MANAGEMENT REQUIREMENTS

1. Change in Discharge
   a. All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant not authorized by this permit or any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.
   b. Any facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants shall be reported by submission of a new NPDES application at least sixty (60) days before such changes, or, if they will not violate the effluent limitations specified in the permit, by notice to the Department at least thirty (30) days before such changes.

2. Noncompliance Notification
   a. If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Department with the following information, in writing within five (5) days of becoming aware of such conditions:
      (i) a description of the discharge and cause of noncompliance, and
      (ii) the period of noncompliance, including exact dates and times.
   b. Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally with 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided with five (5) days of the time the permittee becomes aware of the circumstances. The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

3. Facilities Operation
   Permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions. Operators or supervisors of operations at publicly owned or publicly regulated wastewater treatment facilities shall be certified in accordance with 10 CSR 209.020(2) and any other applicable law or regulation. Operators of other wastewater treatment facilities, water contaminant source or point sources, shall, upon request by the Department, demonstrate that wastewater treatment equipment and facilities are effectively operated and maintained by competent personnel.

4. Adverse Impact
   The permittee shall take all necessary steps to minimize any adverse impact to waters of the state resulting from noncompliance with any effluent limitations specified in this permit or set forth in the Missouri Clean Water Law and Regulations (hereinafter the law and Regulations), including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.
a. Any bypass or shut down of a wastewater treatment facility and<br>tributary sewer system or any part of such a facility and sewer system<br>that results in a violation of permit limits or conditions is prohibited<br>except:<br>(i) where unavoidable to prevent loss of life, personal injury, or<br>severe property damages; and<br>(ii) where unavoidable excessive storm drainage or runoff would<br>caustrophically damage any facilities or processes necessary<br>for compliance with the effluent limitations and conditions of<br>this permit.<br>(iii) where maintenance is necessary to ensure efficient operation<br>and alternative measures have been taken to maintain efficient<br>quality during the period of maintenance.<br>b. The permitee shall notify the Department in writing of all bypasses<br>or shut down that result in a violation of permit limits or conditions.<br>This section does not excuse any person from liability, unless such<br>relief is otherwise provided by the statute.

6. Removed Substances<br>Solids, sludges, filter backwash, or any other pollutants removed in the<br>course of treatment or control of wastewater shall be disposed of in a<br>manner such as to prevent any pollutants from entering waters of the state<br>unless permitted by the Law, and a permanent record of the date and time,<br>volume and methods of removal and disposal of such substances shall be<br>maintained by the permittee.

7. Power Failures<br>In order to maintain compliance with the effluent limitations and other<br>provisions of this permit, the permittee shall either:<br>a. in accordance with the “Schedule of Compliance”, provide an<br>alternative power source sufficient to operate the wastewater control<br>facilities or,<br>b. if such alternative power source is not in existence, and no date for<br>its implementation appears in the Compliance Schedule, halt or<br>otherwise control production and all discharges upon the reduction,<br>loss, or failure of the primary source of power to the wastewater<br>control facilities.

8. Right of Entry<br>For the purpose of inspecting, monitoring, or sampling the point source,<br>water contaminant source, or wastewater treatment facility for compliance<br>with the Clean Water Law and these regulations, authorized representatives<br>of the Department, shall be allowed by the permittee, upon presentation of<br>credentials and at reasonable times;<br>a. to enter upon permittee’s premises in which a point source, water<br>contaminant source, or wastewater treatment facility is located or in<br>which any records are required to be kept under terms and conditions of<br>the permit;<br>b. to have access to, or copy, any records required to be kept under<br>terms and conditions of the permit;<br>c. to inspect any monitoring equipment or method required in the<br>permit;<br>d. to inspect any collection, treatment, or discharge facility covered<br>under the permit; and<br>e. to sample any wastewater at any point in the collection system or<br>treatment process.

9. Permits Transferable<br>a. Subject to Section (3) of 10 CSR 20-6.610 an operating permit may<br>be transferred upon submission to the Department of an application<br>to transfer signed by a new owner. Until such time as the permit is<br>officially transferred, the original permittee remains responsible for<br>complying with the terms and conditions of the existing permit.<br>b. The Department, within thirty (30) days of receipt of the application<br>shall notify the new permittee of its intent to revoke and reissue or<br>transfer the permit.

10. Availability of Reports<br>Except for data determined to be confidential under Section 308 of the Act,<br>and the Law and Missouri Clean Water Commission Regulation for Public<br>Participation, Hearings and Notice to Governmental Agencies 10 CSR 20-<br>6.020, all reports prepared in accordance with the terms of this permit shall<br>be available for public inspection at the offices of the Department. As<br>required by statute, effluent data shall not be considered confidential.<br>Knowingly making any false statement on any such report shall be subject<br>to the imposition of criminal penalties as provided in Section 204.076 of<br>the Law.

a. Subject to compliance with statutory requirements of the Law and<br>Regulations and applicable Court Order, this permit may be<br>modified, suspended, or revoked in whole or in part during its term<br>for cause including, but not limited to, the following:<br>(i) violation of any terms or conditions of this permit or the Law;<br>(ii) having obtained this permit by misrepresentation or failure to<br>disclose fully any relevant facts;<br>(iii) a change in any circumstances or conditions that requires either<br>a temporary or permanent reduction or elimination of the<br>authorized discharge, or<br>(iv) any reason set forth in the Law and Regulations.<br>b. The filing of a request by the permittee for a permit modification,<br>revocation and reissuance, or termination, or a notification of planned<br>changes or anticipated noncompliance, does not stay any permit<br>condition.

12. Permit Modification - Less Stringent Requirements<br>If any permit provisions are based on legal requirements which are<br>lessened or removed, and should no other basis exist for such permit<br>provisions, the permit shall be modified after notice and opportunity for a<br>hearing.

13. Civil and Criminal Liability<br>Except as authorized by statute and provided in permit conditions on<br>“Bypassing” (Standard Condition B-5) and “Power Failures” (Standard<br>Condition B-7) nothing in this permit shall be construed to relieve the<br>permittee from civil or criminal penalties for noncompliance.

14. Oil and Hazardous Substance Liability<br>Nothing in this permit shall be construed to preclude the institution of any<br>legal action or relieve the permittee from any responsibilities, liabilities,<br>or penalties to which the permittee is or may be subject under Section 311<br>of the Act, and the Law and Regulations. Oil and hazardous materials<br>discharges must be reported in compliance with the requirements of<br>the Federal Clean Water Act.

15. State Laws<br>Nothing in this permit shall be construed to preclude the institution of any<br>legal action or relieve the permittee from any responsibilities, liabilities,<br>or penalties established pursuant to any applicable state statute or regulations.

16. Property Rights<br>The issuance of this permit does not convey any property rights in either<br>real or personal property, or any exclusive privileges, no does it authorize<br>any injury to private property or any invasion of personal rights, nor any<br>infringement of or violation of federal, state or local laws or regulations.

17. Duty to Reapply<br>If the permittee wishes to continue an activity regulated by this permit after<br>the expiration date of this permit, the permittee must apply for a new<br>permit 180 days prior to expiration of this permit.

18. Toxic Pollutants<br>If a toxic effluent standard, prohibition, or schedule of compliance is<br>established, under Section 307(a) of the Federal Clean Water Act for a<br>toxic pollutant in the discharge of permittee’s facility and such standard is<br>more stringent than the limitations in the permit, then the more stringent<br>standard, prohibition, or schedule shall be incorporated into the permit as<br>one of its conditions, upon notice to the permittee.

19. Signatory Requirement<br>All reports, or information submitted to the Director shall be signed<br>(see 40 CFR-122.6).

20. Rights Not Affected<br>Nothing in this permit shall affect the permittee’s right to appeal or seek a<br>variance from applicable laws or regulations as allowed by law.

21. Severability<br>The provisions of this permit are severable, and if any provisions of this<br>permit, or the application of any provision of this permit to any<br>circumstance, is held invalid, the application of such provision to other<br>circumstances, and the remainder of this permit, shall not be affected<br>thereby.
STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
AUGUST 15, 1994

PART III – SLUDGE & BIOSOLIDS FROM DOMESTIC WASTEWATER TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation and incorporates applicable federal sludge disposal requirements under 40 CFR 503. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFS 503 until such time as Missouri is delegated the new EPA sludge program. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address federal requirements.

2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW) and privately owned facilities.

3. Sludge and Biosolids Use and Disposal Practices.
   a. Permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
   b. Permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
   c. Permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
   d. A separate operating permit is required for each operating location where sludge or biosolids are generated, stored, treated, or disposed, unless specifically exempted in this permit or in 10 CSR 20, Chapter 6 regulations. For land application, see section H, subsection 3 of these standard conditions.

4. Sludge Received From Other Facilities
   a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
   b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge.
   c. Sludge received from out-of-state generators shall receive prior approval of the permitting authority and shall be listed in the facility description or special conditions section of the permit.

5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.

6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.

7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act or under Chapter 644 RsMo.

8. In addition to the STANDARD CONDITIONS, the department may include sludge limitations in the special conditions portion or other sections of this permit.

   Where deemed appropriate, the department may require an individual site specific permit in order to authorize alternate limitations:
   a. An individual permit must be obtained for each operating location, including application sites.
   b. To request a site specific permit, an individual permit application, permit fees, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.

10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the department, as follows:
    a. The department will prepare a permit modification and follow permit public notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owners of property located adjacent to each land application site, where appropriate.
    b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.

11. Compliance Period
    Compliance shall be achieved as expeditiously as possible but no later than the compliance dates under 40 CFR 503.2.
SECTION B – DEFINITIONS

1. Biosolids means an organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge. Untreated sludge or sludge that does not conform to the pollutants and pathogen treatment requirements in this permit is not considered biosolids.

2. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.

3. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR 503.

4. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PFRP) in accordance with 40 CFR 503.

5. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a public owned treatment works (POTW) or privately owned facility.

6. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include unaerated wastewater treatment lagoons and constructed wetlands for wastewater treatment.

7. Operating location as defined in 10 CSR 20-2.010 is all contiguous lands owned, operated or controlled by one (1) person or by two (2) or more persons jointly or as tenants in common.

8. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the next growing season after biosolids application.

9. Sinkhole is a depression in the land surface into which surface water flows to join an underground drainage system.

10. Site Specific Permit is a permit that has alternate limits developed to address specific site conditions for each land application site or storage site.

11. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks.

12. Sludge lagoon is an earthen basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.

13. Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamp, marshes, bogs, and similar areas. Wetlands do not include constructed wetlands used for wastewater treatment.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Sludge shall be routinely removed from the wastewater treatment facilities and handled according to the permit facility description and sludge conditions in this permit.

2. The permittee shall operate the facility so that there is no sludge loss into the discharged effluent in excess of permit limits, no sludge bypassing, and no discharge of sludge to waters of the state.

3. Mechanical treatment plants shall have separate sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove sludge from these storage compartments on the required design schedule is a violation of this permit.

SECTION D – SLUDGE DISPOSED AT OTHER TREATMENT FACILITY OR CONTRACT HAULER

1. This section applies to permittees that haul sludge to another treatment facility for disposal or use contract haulers to remove and dispose of sludge.

2. Permittees that use contract haulers are responsible for compliance with all the terms of this permit including final disposal, unless the hauler has a separate permit for sludge or biosolids disposal issued by the department; or the hauler transports the sludge to another permitted treatment facility.

3. The permittee shall require documentation from the contractor of the disposal methods used and permits obtained by the contractor.

4. Testing of sludge, other than total solids content, is not required if sludge is hauled to a municipal wastewater treatment facility or other permitted wastewater treatment facility.
SECTION E – WASTEWATER TREATMENT LAGOONS AND STORMWATER RETENTION BASINS

1. Sludge that is retained within a wastewater treatment lagoon is subject to sludge disposal requirements when the sludge is removed from the lagoon or when the lagoon ceases to receive and treat wastewater.
2. If sludge is removed during the year, an annual sludge report must be submitted.
3. Storm water retention basins or other earthen basins, which have been used as sludge storage for a mechanical treatment system is considered a sludge lagoon and must comply with Section G of this permit.

SECTION F – INCINERATION OF SLUDGE

1. Sludge incineration facilities shall comply with the requirements of 40 CFR 503 Subpart E; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or if the ash is determined to be hazardous waste, shall be disposed in accordance with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, quantity of sludge incinerated, quantity of ash generated, quantity of ash stored; and ash use or disposal method, quantity, and location. Permittee shall also provide the name of the disposal facility and the applicable permit number.
4. Additional limitations, monitoring, and reporting requirements may be addressed in the Special Conditions sections of this permit.

SECTION G – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

1. Surface disposal sites shall comply with the requirements in 40 CFR 503 Subpart C, and solid waste disposal regulations under 10 CSR 80.
2. Additional limitations, monitoring, and reporting requirements may be addressed in the Special Conditions section of this permit.
3. Effective February 19, 1995, a sludge lagoon that has been in use for more than two years without removal of accumulated sludge, or that has not been properly closed shall comply with one of the following options:
   a. Permittee shall obtain a site specific permit to address surface disposal requirements under 40 CFR 503, ground water quality regulations under 10 CSR 20, Chapter 7 and 8, and solid waste management regulations under 10 CSR 80;
   b. Permittee shall clean out the sludge lagoon to remove any sludge over two years old and shall continue to remove accumulated sludge at least every two years or an alternate schedule approved under 40 CFR 503.20(b). In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of sludge on the bottom of the lagoon, upon prior approval of the department; or
   c. Permittee shall close the lagoon in accordance with Section 1.

SECTION H – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the Facility Description or special conditions section of the permit.
2. This permit replaces and terminates all previous sludge management plan approvals by the department for land application of sludge or biosolids.
3. Land application sites within a 20 mile radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless a site specific permit is required under Section A, Subsection 9.
4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
   a. This permit does not authorize the land application of sludge except when sludge meets the definition of biosolids.
   b. This permit authorizes “Class A or B” biosolids derived from domestic wastewater sludgetes to be land applied onto grass land, crop land, timber land or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
5. Public Contact Sites.
   Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the department. Applications for approval shall be in the form of an engineering report and shall address priority pollutants and dioxin concentrations. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site-specific permit.
Agricultural and Silvicultural Sites.
In addition to specified conditions herein, this permit is subject to the attached Water Quality Guides numbers WQ 422 through 426 published by the University of Missouri, and hereby incorporated as though fully set forth herein. The guide topics are as follows:

- WQ 422 Land Application of Septage
- WQ 423 Monitoring Requirements for Biosolids Land Application
- WQ 424 Biosolids Standards for Pathogens and Vectors
- WQ 425 Biosolids Standards for Metals and Other Trace Substances
- WQ 426 Best Management Practices for Biosolids Land Applications

SECTION I – CLOSURE REQUIREMENTS

1. This section applies to all wastewater treatment facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.

2. Permittees who plan to cease operation must obtain department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids, and ash. Permittee must maintain this permit until the facility is properly closed per 10 CSR 20-6.010 and 10 CSR 20-6.015.

3. Residuals that are left in place during closure of a lagoon or earthen structure shall not exceed the agricultural loading rates as follows:
   a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
   b. If a wastewater treatment lagoon has been in operation for 15 years or more, the sludge in the lagoon qualifies for Class B with respect to pathogens (see WQ 424, Table 3), and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B limitations. See WQ 423 and 424.
   c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. See WQ 426 for calculation procedures. For a grass cover crop, the allowable PAN is 300 pounds/acre.

4. When closing a wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered “septage” under the similar treatment works” definition. See WQ 422. Under the septage category, residuals may be left in place as follows:
   a. Testing for metals or fecal coliform is not required.
   b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at the rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
   c. The amount of sludge that may be left in the lagoon shall be based on the plan available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If more than 100 dry tons/acre will be left in the lagoon, test for nitrogen and determine the PAN in accordance with WQ 426. Allowable PAN loading is 300 pounds/acre.

5. Residuals left within the lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berms shall be demolished, and the site shall be graded and vegetated so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.

6. Lagoon closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed five acres in accordance with 10 CSR 20-6.200.

7. If sludge exceeds agricultural loading rates under Section H or I, a landfill permit or solid waste disposal permit shall be obtained to authorize on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.

SECTION J – MONITORING FREQUENCY

1. At a minimum, sludge or biosolids shall be tested for volume and percent total solids on a frequency that will accurately represent sludge quantities produced and disposed.

2. Testing for land application is listed under Section H, Subsection 6 of these standard conditions (see WQ 423). Once per year is the minimum test frequency. Additional testing shall be performed for each 100 dry tons of sludge generated or stored during the year.

3. Additional testing may be required in the special conditions or other sections of the permit. Permittees receiving industrial wastewater may be required to conduct additional testing upon request from the department.

SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in these Standard Conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.

2. Reporting Period
   a. By January 28th of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
   b. Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.

3. Report Forms. The annual report shall be submitted on report forms provided by the department or equivalent forms approved by the department.

4. Report shall be submitted as follows:
   Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the department and EPA. Other facilities need to report only to the department. Reports shall be submitted to the addresses listed as follows:
   - DNR regional office listed in your permit
   - (See cover letter of permit)
   - EPA Region VII
     Water Compliance Branch (WACM)
     Sludge Coordinator
     901 N 5th Street
     Kansas City, KS 66101

5. Annual Report Contents. The annual report shall include the following:
   a. Sludge/biosolids testing performed. Include a copy or summary of all test results, even if not required by this permit.
   b. Sludge or Biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at end of year, and the quantity used or disposed.
   c. Gallons and % solids data used to calculate the dry ton amounts.
   d. Description of any unusual operating conditions.
   e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
      (1) This must include the name, address and permit number for the hauler and the sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name and permit number of that facility.
      (2) Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
   f. Contract Hauler Activities.
      If contract hauler, provide a copy of a signed contract or billing receipts from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge disposal or biosolids use permit.
   g. Land Application Sites.
      (1) Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as legal description for nearest ¼, ¼, Section, Township, Range, and County, or as latitude and longitude.
      (2) If biosolids application exceeds 2 dry tons/acre/year, report biosolids nitrogen results. Plant Available Nitrogen (PAN) in pounds/acre, crop nitrogen requirement, available nitrogen in the soil prior to biosolids application, and PAN calculations for each site.
      (3) If the “Low Metals” criteria is exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative loading which has been reached at each site.
      (4) Report the method used for compliance with pathogen and vector attraction requirements.
      (5) Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.
**MISSOURI DEPARTMENT OF NATURAL RESOURCES**
**WATER PROTECTION PROGRAM**

**APPLICATION FOR TRANSFER OF OPERATING PERMIT**

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**THE FOLLOWING ITEMS (1 – 4) ARE TO BE COMPLETED BY THE CURRENT OWNER. SEE INSTRUCTIONS FOR APPROPRIATE FEE TO BE SUBMITTED WITH APPLICATION.**

---

### 1. FACILITY

<table>
<thead>
<tr>
<th>NAME</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolivar WWTF</td>
<td>417-326-2489</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDRESS (PHYSICAL)</th>
<th>CITY</th>
<th>STATE</th>
<th>ZIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1801 E Broadway</td>
<td>Bolivar</td>
<td>MO</td>
<td>65613</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>PERMIT NUMBER</th>
<th>COUNTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>#MO- 0022373</td>
<td>Polk</td>
</tr>
</tbody>
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---

### 2. CURRENT OWNER

<table>
<thead>
<tr>
<th>NAME</th>
<th>EMAIL ADDRESS</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Bolivar</td>
<td></td>
<td>417-326-2489</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDRESS</th>
<th>CITY</th>
<th>STATE</th>
<th>ZIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>345 S Main Ave PO Box 9</td>
<td>Bolivar</td>
<td>MO</td>
<td>65613</td>
</tr>
</tbody>
</table>

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### 3. CONTINUING AUTHORITY

<table>
<thead>
<tr>
<th>NAME</th>
<th>EMAIL ADDRESS</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same as above</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Same as above</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### 4. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

**NAME (TYPE OR PRINT)**

Tracy Slagle

**OFFICIAL TITLE**

City Administrator

**TELEPHONE NUMBER WITH AREA CODE**

417-326-2489

**SIGNATURE**

Tracy Slagle

**DATE SIGNED**

2/3/22

---

**FOR AGENCY USE ONLY**

**CHECK NO.**

**DATE RECEIVED**

2/10/22

**FEE SUBMITTED**

$100.00

**JETPAY CONFIRMATION NUMBER**

20030521

---

**MOVED TO 1501 E Broadway**

---

**RECEIVED**

FEB 10 2022

Water Protection Program
THE FOLLOWING ITEMS (5 – 10) WILL APPLY AFTER THE COMPLETION OF TRANSFER (SALE) AND ARE TO BE COMPLETED BY THE APPLICANT FOR TRANSFER OF OPERATING PERMIT (BUYER) OR AUTHORIZED AGENT.

5. FACILITY (IF DIFFERENT THAN ABOVE)

<table>
<thead>
<tr>
<th>NAME</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberty Utilities (MO Water) LLC</td>
<td>417-229-8018</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDRESS</th>
<th>CITY</th>
<th>STATE</th>
<th>ZIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>509 E Church St</td>
<td>Aurora</td>
<td>MO</td>
<td>65605</td>
</tr>
</tbody>
</table>

Is the owner PSC regulated?  Yes ☑ No ☐ If YES, please provide your Certificate of Convenience and Necessity.

6. FUTURE OWNER

<table>
<thead>
<tr>
<th>NAME</th>
<th>EMAIL ADDRESS</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same as above</td>
<td><a href="mailto:paul.carlson@libertyutilities.com">paul.carlson@libertyutilities.com</a></td>
<td>417-229-8018</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDRESS</th>
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<th>STATE</th>
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<tr>
<td>Same as above</td>
<td>Aurora</td>
<td>MO</td>
<td>65605</td>
</tr>
</tbody>
</table>

7. CONTINUING AUTHORITY

<table>
<thead>
<tr>
<th>NAME</th>
<th>EMAIL ADDRESS</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul Carlson</td>
<td><a href="mailto:paul.carlson@libertyutilities.com">paul.carlson@libertyutilities.com</a></td>
<td>417-229-8018</td>
</tr>
</tbody>
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<thead>
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<td>MO</td>
<td>65605</td>
</tr>
</tbody>
</table>

8. FACILITY CONTACT

<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul Carlson</td>
<td>Water Operations Manager</td>
</tr>
</tbody>
</table>

9. ADDITIONAL INFORMATION

9.1 Anticipated effective date of transfer of ownership:

9.2 Are there any changes in production, in raw materials, or in the quantity of discharges from this facility planned or anticipated?

Yes ☑ No ☐ If yes, explain (Attach sheets as necessary)

10. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally-consistent set of data. One of the following must be checked in order for this application to be considered complete. Please visit http://dnr.mo.gov/env/wpp/edmr.htm to access the Facility Participation Package.

☐ - You have completed and submitted with this permit application the required documentation to participate in the eDMR system.

☑ - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.

☐ - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

11. JETPAY

Permit fees may be payed online by credit card or eCheck through a system called JetPay. Use the URL provided to access JetPay and make an online payment.

Modification Fee: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/596/

12. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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<th>OFFICIAL TITLE</th>
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</thead>
<tbody>
<tr>
<td>Paul Carlson</td>
<td>Water Operations Manager</td>
<td>417-229-8018</td>
</tr>
</tbody>
</table>

SIGNATURE

Paul Carlson

DATE SIGNED

2/3/22
INSTRUCTIONS FOR COMPLETING APPLICATION FOR TRANSFER OF OPERATING PERMIT

All blanks must be filled in when the application is submitted to the Missouri Department of Natural Resources. This includes BOTH required signatures.

Department of Natural Resources regulation 10 CSR 20-6.010 (11) governs the transfer of National Pollutant Discharge Elimination System (NPDES) permits. Until such time as the permit is officially transferred, the current permittee remains responsible for complying with the terms and conditions of the existing permit. The department, within thirty (30) days of receipt of this application, shall notify the new applicant of its intent to revoke and reissue or transfer the permit.

Section 1-4. Current permittee (present owner/seller) is to complete items 1 - 4.
Section 5-10. Applicant for transfer of operating permit (future owner/buyer) is to complete items 5 - 10.
Section 2 & 6. Owner: Provide the legal name, mailing address, phone number, and email address of the owner. The owner identified in this section and subsequently reflected on the certificate page of the operating permit, is the owner of the regulated activity/discharge being applied for and is not necessarily the owner of the real property on which the activity or discharge is occurring.

Section 3 & 7. Continuing Authority – A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements. A continuing authority is not, however, an entity or individual that is contractually hired by the permittee to sample or operate and maintain the system for a defined time period, such as a certified operator or analytical laboratory. To access the regulatory requirement regarding continuing authority, 10 CSR 20-6.010(2), please visit https://s1.sos.mo.gov/cmsimages/adrules/csr/current/10CSR/10CSR06B.pdf. If the continuing authority is not an individual(s), government, or otherwise required to register with the Missouri Secretary of State (SoS), then the business name must be listed exactly as it appears on the SoS’s webpage: https://bed.sos.mo.gov/BusinessEntity/BESearch.aspx?SearchType=0

Section 10. Electronic Discharge Monitoring Report (eDMR) Submission System – You can find the eDMR application at the following link: https://dnr.mo.gov/forms/780-2204-f.pdf

Waivers to electronic reporting may be granted by the Department per 40 CFR 127.15 under certain, special circumstances. A written request must be submitted to the Department for approval. Waivers may be granted to facilities owned or operated by:
   a. members of religious communities that choose not to use certain technologies or
   b. permittees located in areas with limited broadband access. The National Telecommunications and Information Administration (NTIA) in collaboration with the Federal Communications Commission (FCC) have created a broadband internet availability map: http://www.broadbandmap.gov/. Please contact the Department if you need assistance.

Section 4. & 12. Signatures - All applications must be signed as follows and the signatures must be original:
   a. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
   b. For a partnership or sole proprietorship, by a general partner or the proprietor.
   c. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

Section 11. JetPay

Applicants can pay fees online by credit card or eCheck through a system called JetPay.
   • Per Section 37.001, RSMo, a transaction fee will be included. The transaction fee is paid to the third party vendor JetPay, not the Department of Natural Resources.
   • Upon successful completion of your payment, JetPay provides a payment confirmation. Submit this form with a copy of the payment confirmation if requesting a new permit or a permit modification. For permit renewals of active permits, the Department will invoice fees annually in a separate request.
   • If you are unable to make your payment online, but want to pay with credit card, you may email your name, phone number, and invoice number, if applicable, to WPPFees@dnr.mo.gov. The Budget, Fees, and Grants Management Unit will contact you to assist with the credit card payment. Please do not include your credit card information in the email.
   • Applicants can find fee rates in 10 CSR 20-6.011 (https://dnr.mo.gov/pubs/pub2564.htm).
   • Permit modifications, including transfers, are subject to the following fees: $200 for Municipals and $100 for All others

Note: Business name and address changes where owner and continuing authority remain the same are not considered transfers.

Submittal of an incomplete application may result in the application being returned.

This completed form and any attachments along with the applicable permit fees, should be submitted to:

Department of Natural Resources
Water Protection Program
ATTN: Operating Permits Section
P.O. Box 176
Jefferson City, MO 65102

Map of regional offices with addresses and phone numbers are available on the Web at http://dnr.mo.gov/regions/. If there are any questions concerning this form, please contact the appropriate regional office or the Department of Natural Resources, Water Protection Program, Operating Permits Section at 800-361-4827 or 573-522-4502.