

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

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

Permit No. MO-0023027

Owner: City of Sedalia
Address: P.O. Box 1707, Sedalia, MO 65302-1707

Continuing Authority: Same as above
Address: Same as above

Facility Name: Sedalia North Wastewater Treatment Facility
Facility Address: 23985 Georgetown Road, Sedalia, MO 65301

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

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

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

FACILITY DESCRIPTION

See page two (2)

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

April 3, 2009 September 6, 2012
Effective Date Revised


Sara Parker Pauley, Director, Department of Natural Resources

April 2, 2014
Expiration Date


John Madros, Director, Water Protection Program

FACILITY DESCRIPTION (continued)

Outfall #001 - POTW - SIC #4952 - Certified "B" Operator Required

Two (2) primary clarifiers/ two (2) high rate trickling filters/ one (1) secondary clarifier/ one (1) secondary anaerobic digester, belt press, sludge is land applied by permittee.

Design population equivalent is 72,000.

Design flow is 2.5 MGD.

Actual flow is 0.94 MGD.

Design sludge production is 2,016 dry tons/year.

Actual sludge production is 201 dry tons/year.

| | |
|---------------------------------|--|
| Legal Description: | SW ¼, SW ¼, Sec. 28, T46N, R21W, Pettis County |
| UTM Coordinates: | X = 479080.987, Y = 4286747.028 |
| Receiving Stream: | Sewer Creek (U) 303(d) List |
| First Classified Stream and ID: | Sewer Branch (C) (00860) |
| USGS Basin & Sub-watershed No.: | (10300103-0406) |

Outfall 002 –Eliminated

Discharges from flow equalization basin are no longer authorized. Further discharges from this outfall shall be reported as bypasses.

Outfall #003 - Eliminated, No Exposure.

| A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS | | | | | PAGE NUMBER 3 of 8 | |
|---|------------|------------------------------|----------------|-----------------|--------------------------|------------------|
| | | | | | PERMIT NUMBER MO-0023027 | |
| The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until three (3) years after the effective date of this permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below: | | | | | | |
| OUTFALL NUMBER AND EFFLUENT PARAMETER(S) | UNITS | INTERIM EFFLUENT LIMITATIONS | | | MONITORING REQUIREMENTS | |
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| <u>Outfall #001</u> | | | | | | |
| Flow | MGD | * | | * | Once/day | 24 hr. total |
| Biochemical Oxygen Demand ₅ ** | mg/L | | 45 | 30 | Once/week | 24 hr. composite |
| Total Suspended Solids** | mg/L | | 45 | 30 | Once/week | 24 hr. composite |
| pH – Units | SU | *** | | *** | Once/week | grab |
| Temperature | °C | * | | * | Once/week | grab |
| Ammonia as N (May 1 – Oct 31) | mg/L | 4.2 | | 2.1 | Once/week | grab |
| (Nov 1 – April 30) | | 7.0 | | 2.9 | Once/week | grab |
| Oil & Grease | mg/L | 15 | | 10 | Once/month | grab |
| MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>May 28, 2009</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |
| Cadmium, Total Recoverable | µg/L | 1.21 | | 0.44 | Once/quarter | 24 hr. composite |
| Chromium (VI), Total Recoverable | µg/L | * | | * | Once/quarter | 24 hr. composite |
| Copper, Total Recoverable | µg/L | 30.2 | | 18.5 | Once/quarter | 24 hr. composite |
| MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>July 28, 2009</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |
| Whole Effluent Toxicity (WET) test | % Survival | See Special Condition #11 | | | Once/year | 24 hr. composite |
| MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2009</u> . | | | | | | |
| B. STANDARD CONDITIONS | | | | | | |
| IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN. | | | | | | |

| A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS | | | | | PAGE NUMBER 4 of 8 | |
|---|------------|----------------------------|----------------|-----------------|--------------------------|------------------|
| | | | | | PERMIT NUMBER MO-0023027 | |
| The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective three (3) years from the effective date of this permit and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below: | | | | | | |
| OUTFALL NUMBER AND EFFLUENT PARAMETER(S) | UNITS | FINAL EFFLUENT LIMITATIONS | | | MONITORING REQUIREMENTS | |
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| <u>Outfall #001</u> | | | | | | |
| Flow | MGD | * | | * | Once/day | 24 hr. total |
| Biochemical Oxygen Demand ₅ ** | mg/L | | 45 | 30 | Once/week | 24 hr. composite |
| Total Suspended Solids** | mg/L | | 45 | 30 | Once/week | 24 hr. composite |
| pH – Units | SU | *** | | *** | Once/week | grab |
| Temperature | °C | * | | * | Once/week | grab |
| Ammonia as N (May 1 – Oct 31) | mg/L | 5.5 | | 2.2 | Once/week | grab |
| (Nov 1 – April 30) | | 7.5 | | 2.9 | Once/week | grab |
| Oil & Grease | mg/L | 15 | | 10 | Once/month | grab |
| MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>May 28, 2012</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |
| Cadmium, Total Recoverable | µg/L | 1.21 | | 0.44 | Once/quarter | 24 hr. composite |
| Chromium (VI), Total Recoverable | µg/L | * | | * | Once/quarter | 24 hr. composite |
| Copper, Total Recoverable | µg/L | 30.2 | | 18.5 | Once/quarter | 24 hr. composite |
| MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>October 28, 2012</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |
| Whole Effluent Toxicity (WET) test | % Survival | See Special Condition #11 | | | Once/year | 24 hr. composite |
| MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE NEXT REPORT IS DUE <u>October 28, 2012</u> . | | | | | | |
| B. STANDARD CONDITIONS | | | | | | |
| IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN. | | | | | | |

* Monitoring requirement only.

** This facility is required to meet a removal percentage, please see Part C – Influent Monitoring Requirements below.

*** 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.

**** This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved methods. The Department has determined the current acceptable ML for Cyanide amenable to Chlorination to be 16 µg/L when using the Cyanide by Automated Colorimetric Method #335.3 from the U.S.EPA National Exposure Research Laboratory. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 16 µg/L will be considered violations of the permit and values less than the minimum quantification level of 16 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of Cyanide in excess of the effluent limits stated in the permit.

| C. INFLUENT MONITORING REQUIREMENTS | | PERMIT NUMBER MO-0023027 | |
|--|-------|--------------------------|------------------|
| The facility is required to meet a removal efficiency of 65% or more. The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below: | | | |
| SAMPLING LOCATION AND PARAMETER(S) | UNITS | MONITORING REQUIREMENTS | |
| | | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| <u>Influent</u> | | | |
| Biochemical Oxygen Demand ₅ | mg/L | Once/month | 24 hr. composite |
| Total Suspended Solids | mg/L | Once/month | 24 hr. composite |
| MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>May 28, 2009</u> . | | | |

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.
 - (d) If concurrent and Department approved site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the Department, the partitioning evaluations may be considered, as part of a modification request, and site-specific translators developed.

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.

D. SPECIAL CONDITIONS (continued)

6. 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.
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 monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the Department for review and, if deemed necessary, approval.
8. The permittee shall develop and implement a program for maintenance and repair of the collection system. The permittee shall submit a report semi-annually in April and October to the Kansas City Regional Office with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.
9. Permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 40 CFR Part 403. The approved pretreatment program is hereby incorporated by reference.

Permittee shall submit to the Department on or before March 31st of each year a report briefly describing its pretreatment activities during the previous calendar year. At a minimum, the report shall include the following:

- (a) An updated list of the Permittee's Industrial Users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Permittee shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The Permittee shall also list the Industrial Users that are subject only to local Requirements;
- (b) A summary of the status of Industrial User compliance over the reporting period;
- (c) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and
- (d) Any other relevant information requested by the Department.

D. SPECIAL CONDITIONS (continued)

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

| SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT | | | | |
|--|------|-----------|-------------------|--------|
| OUTFALL | AEC | FREQUENCY | SAMPLE TYPE | MONTH |
| 001 | 100% | Annually | 24 hr. composite* | August |

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

| Dilution Series | | | | | | |
|----------------------|--------------|--------------|----------------|----------------|---------------------------------------|---|
| AEC% = 100% effluent | 50% effluent | 25% effluent | 12.5% effluent | 6.25% effluent | (Control) 100% upstream, if available | (Control) 100% Lab Water, also called synthetic water |

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
 - (a) 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.
 - (b) 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 analysis performed upon any other effluent concentration.
 - (c) 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.
- (2) The WET test will be considered a failure if mortality observed in effluent concentrations for either specie, equal to or less than the AEC, is 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, synthetic laboratory control water may be used.
- (3) 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.
- (4) If the effluent fails the test for BOTH test species, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met: Note: Written request regarding single species multiple dilution accelerated testing will be address by THE WATER PROTECTION PROGRAM on a case by case basis.
 - (i) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
 - (ii) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (5) Follow-up tests do not negate an initial failed test.
- (6) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
- (7) Additionally, the following shall apply upon failure of the third follow up MULTIPLE DILUTION test The permittee should 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. If the permittee does not contact THE WATER PROTECTION PROGRAM upon the third follow up test failure, a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. 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 the automatic trigger or 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.

D. SPECIAL CONDITIONS (continued)

- (8) 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.
- (9) 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.
- (10) 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.
- (11) Submit a concise summary in tabular format of all WET test results with the annual report.

(b) 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 unless approved by the Department on a case by case basis.
- (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 "Allowable Effluent Concentration" (AEC) specified above.
- (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
- (6) Tests will be run with 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent, and reconstituted water.
- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
- (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.
- (9) Whole-effluent-toxicity test 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

E. SCHEDULE OF COMPLIANCE

The permittee shall meet the effluent limitations contained in Table A – Final Effluent Limitations no later than three (3) years of issuance of this operating permit. To ensure that appropriate steps are being implemented by the permittee, the permittee shall submit Interim Compliance Reports to the Department's Kansas City Regional Office, as follows:

1. Within one (1) year of issuance of the operating permit, the permittee shall submit an Interim Compliance Report that will include the steps implemented by the permittee to ensure compliance with the Final Effluent Limitations contained within this operating permit.
2. Within two (2) years issuance of this operating permit, the permittee shall submit an Interim Compliance Report that will include the steps implemented, for the second year, by the permittee to ensure compliance with the Final Effluent Limitations contained within this operating permit.

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0023027
SEDALIA NORTH WASTEWATER TREATMENT FACILITY

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

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

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

This Factsheet is for a Major

Part I – Facility Information

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

Facility Description:

This facility consist of a channel monster, aerated grit chamber, flow measuring device, 2 primary clarifiers, primary pump stations, 2 high rate trickling filters, secondary pump stations, 1 secondary clarifier, primary and secondary anaerobic digester, 1 meter belt press, and sludge is land applied. The Average Daily Design Flow of this facility is 2.5 MGD.

Application Date: August 31, 2007
Expiration Date: December 12, 2007
Last Inspection: March 5, 2008 In Compliance ; Non-Compliance

OUTFALL(S) TABLE:

| OUTFALL | DESIGN FLOW (CFS) | TREATMENT LEVEL | EFFLUENT TYPE | DISTANCE TO CLASSIFIED SEGMENT (MI) |
|---------|--|-------------------------|---------------|-------------------------------------|
| 001 | 3.88 | Equivalent to Secondary | Municipal | ~ 2.4 |
| 002 | Outfall is being eliminated, see comments below. | | | |
| 003 | Outfall is being eliminated, see comments below. | | | |

Outfall #001

Legal Description: SW ¼, SW ¼, Sec. 28, T46N, R21W, Pettis County
Latitude/Longitude: +3843449/-09314264
Receiving Stream: Sewer Creek (U) 303(d) List
First Classified Stream and ID: Sewer Branch (C) (00860)
USGS Basin & Sub-watershed No.: (10300103-040004)

Water Quality History:

Staff reviewed the Department's Water Quality Information System (WQIS) from April 2007 to April 2012. This data was used in conjunction with the City submitted hardness data to re-calculate Reasonable Potential Analysis for metals limits.

Comments:

This Modification is to incorporate hardness data collected by the facility. Effluent limits for metals for which toxicity varies by hardness were re-calculated to include this hardness data, or removed if no reasonable potential exists to violate water quality standards.

There were no other changes to this permit.

Part II – Operator Certification Requirements

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

Check boxes below that are applicable to the facility;

- Owned or operated by or for:
 - Municipalities

This facility currently requires an operator with a "B" Certification Level. Please see **Appendix A - Classification Worksheet**. Modifications made to the wastewater treatment facility may cause the classification to be modified.

Operator's Name: Mark Grose
Certification Number: A-4624
Certification Level: A

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri's Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category list effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

All Other Waters [10 CSR 20-7.015(8)]:

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

| WATERBODY NAME | CLASS | WBID | DESIGNATED USES* | 8-DIGIT HUC | EDU** |
|-----------------------------------|-------|-------|------------------------|-------------|--|
| Sewer Branch (a.k.a. Sewer Creek) | U | --- | General Criteria | 10300103 | Central Plains/ Blackwater/ Lamine |
| Sewer Branch | (C) | 00860 | AQL, LWW, WBC(B)*** | | |

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

** - Ecological Drainage Unit

*** - Please see the comment section above.

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

| RECEIVING STREAM (U, C, P) | LOW-FLOW VALUES (CFS) | | |
|----------------------------|-----------------------|------|-------|
| | 1Q10 | 7Q10 | 30Q10 |
| Sewer Branch | 0.0 | 0.0 | 0.0 |

MIXING CONSIDERATIONS TABLE:

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

RECEIVING STREAM MONITORING REQUIREMENTS:

The previous state operating permit contained receiving stream monitoring approximately one (1) mile below this facilities outfalls. Due to the fact that this facility discharges to an unclassified tributary and therefore is subject to Missouri’s Water Quality Criteria at the end-of-pipe, no receiving water monitoring requirements will be recommended at this time.

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

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

Not Applicable ;

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

ANTI-BACKSLIDING:

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

- No degradation proposed and no further review necessary. Facility did not apply for authorization to increase pollutant loading or to add additional pollutants to their discharge. Hardness data submitted by the City of Sedalia was not available at the time of the drafting of the previous permit.

ANTIDegradation:

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

- Renewal no degradation proposed and no further review necessary.

BIO-SOLIDS, SLUDGE, & SEWAGE SLUDGE:

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

Applicable ;

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:

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

Not Applicable ;

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

PRETREATMENT PROGRAM:

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

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

Applicable ;

This permittee has an approved pretreatment program in accordance with the requirements of [40 CSR Part 403] and [10 CSR 20-6.100] and is expected to implement and enforce its approved program.

REASONABLE POTENTIAL ANALYSIS (RPA):

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

Applicable ;

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

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. 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 65% 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.

Applicable ;

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

SCHEDULE OF COMPLIANCE (SOC):

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

Applicable ;

The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations where established in accordance with [10 CSR 20-7.031(10)].

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:

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

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

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

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

WLA MODELING:

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

Not Applicable ;

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

WHOLE EFFLUENT TOXICITY (WET) TEST:

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

Applicable ;

In accordance with the Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System. Furthermore, WET testing is a means by which the Department determines that [10 CSR 20-7.031(3)(D, F, & G)] are being met by the permitted facility. In addition to justification for the WET testing, WET tests are required under [10 CSR 20-6.010(8)(A)4] to be performed by specialist who are properly trained in conducting the test according to the methods prescribed by the Federal Government as referenced in [40 CFR Part 136]. WET test will be required by all facilities meeting the following criteria:

- Facility is a designated Major.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH₃)

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 ;

This facility discharges to Sewer Branch (a.k.a. Sewer Creek), which at this time is not classified, but is listed on the 2002 303(d) List for Multiple Point and Non-Point Sources for Low Dissolved Oxygen.

– The Department’s TMDL Unit is currently awaiting additional water quality data from the EPA Region 7 to support the Sewer Branch (unclassified) TMDL. The section between the CSO outfall and Sedalia North WWTP has been subject of low flow survey only. The section from Sedalia N. WWTP to the receiving streams mouth has had three 24-hour WLAs in consecutive years done approximately 5 years ago. The Department has asked the EPA and their contractor to conduct two 48 hour WLA type studies (early AM/early PM DO, pH, water temp, conductivity, ammonia, nitrate, TKN, Total P, CBOD₅ and flow) on the entire length from Hubbard Creek CSO to mouth), during summer low flow conditions. These data will be used to construct a WLA model, the results of which will be included in a future Sedalia N. WWTP permit renewal or modification. The timeline for the TMDL development is late 2009.

Part V – Effluent Limits Determination

Outfall #001 – Main Facility Outfall

EFFLUENT LIMITATIONS TABLE:

| PARAMETER | UNIT | BASIS FOR LIMITS | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|-----------------------------------|------|------------------|---------------|----------------|-----------------|----------|-----------------------------|
| CYANIDE, AMENABLE TO CHLORINATION | µg/L | 2/3 | | | | | LIMITS REMOVED |
| LEAD | µg/L | 2/3 | | | | | LIMITS REMOVED |
| NICKEL | µg/L | 2/3 | | | | | LIMITS REMOVED |
| SILVER | µg/L | 2/3 | | | | | LIMITS REMOVED |
| ZINC | µg/L | 2/3 | | | | | LIMITS REMOVED |
| CADMIUM, TOTAL RECOVERABLE | µg/L | 2/3 | 1.21 | | 0.44 | YES | 19/10 |
| CHROMIUM (VI), TOTAL RECOVERABLE | µg/L | 2/3 | * | | * | YES | *** |
| COPPER, TOTAL RECOVERABLE | µg/L | 2/3 | 30.2 | | 18.5 | YES | 43/21 |

Effluent limits for all other parameters have not change. Please see the permit issued on April 3, 2009 for an explanation of effluent limit derivation.

* - Monitoring requirement only

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

*** - Previous operating permit only contained Total Chromium and was not speciated.

Basis for Limitations Codes:

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

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and “The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 162 mg/L.

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

| METAL | CONVERSION FACTORS | |
|---------|--------------------|---------|
| | ACUTE | CHRONIC |
| Cadmium | 0.900 | 0.865 |
| Copper | 0.960 | 0.960 |

Conversion factors for Cd and Pb are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and **hardness = 284 mg/L**.

- **Cadmium, Total Recoverable.** A RPA was conducted on Cadmium and determined that it has potential to violate Missouri’s WQS, please see **Appendix B – RPA Results**; therefore, effluent limitations are applicable. **Protection of Aquatic Life Chronic Criteria = 0.5 µg/L, Acute Criteria = 11.6 µg/L. A CV value of 1.272** was calculated in the RPA. No mixing considerations allowed and the CCC and CMC will equal their respective WLA per the TSD.

Chronic = $0.5/0.900 = 0.6 \mu\text{g/L}$
Acute = $11.6/0.865 = 13.4 \mu\text{g/L}$

$WLA_{\text{chronic}} = 0.6 \mu\text{g/L}$
 $WLA_{\text{acute}} = 13.4 \mu\text{g/L}$

$LTA_c = 0.6 (0.306) = 0.2 \mu\text{g/L}$ [CV = 1.272, 99th Percentile]
 $LTA_a = 13.4 (0.165) = 2.2 \mu\text{g/L}$ [CV = 1.272, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 0.2(6.05) = 1.21 µg/L [CV = 1.272, 99th Percentile]
AML = 0.2(2.20) = 0.44 µg/L [CV = 1.272, 95th Percentile, n = 4]

- **Chromium III, Total Recoverable.** A RPA was conducted on Total Chromium and determined that there is not a potential to violate Missouri’s WQS, please see **Appendix B – RPA Results**. Monitoring for this parameter has been removed.
- **Chromium VI, Total Recoverable.** A RPA was conducted on Total Chromium and determined that it has potential to violate Missouri’s WQS; however, Total Recoverable, Chromium (VI), Total Recoverable will only have a monitoring requirement only. This is due to the fact that Chromium (III) is significantly more abundant in use (natural and industrial) versus Chromium (VI), which is industrial use. Staff preparing this Fact Sheet and operating permit reviewed the permittee’s renewal application with regards to industrial wastewater received by this facility. Industrial contributors do not warrant the need for effluent limitations. Upon future renewals of this operating permit, staff will conduct RPA on Chromium (VI), Total Recoverable for the future fate of this pollutant in this operating permit.

- **Copper, Total Recoverable.** A RPA was conducted on Copper, Total Recoverable and determined that it has potential to violate Missouri's WQS, please see **Appendix B – RPA Results**; therefore, effluent limitations are applicable. Protection of Aquatic Life Chronic Criteria = 20 µg/L, Acute Criteria = 32 µg/L. A CV value of 1.438 was calculated in the RPA. No mixing considerations allowed and the CCC and CMC equal their respective WLA per the TSD.

$$\begin{aligned}\text{Chronic} &= 20/0.960 = 21 \text{ } \mu\text{g/L} \\ \text{Acute} &= 32/0.960 = 33 \text{ } \mu\text{g/L}\end{aligned}$$

$$\begin{aligned}\text{WLA}_{\text{chronic}} &= 21 \text{ } \mu\text{g/L} \\ \text{WLA}_{\text{acute}} &= 32 \text{ } \mu\text{g/L}\end{aligned}$$

$$\begin{aligned}\text{LTA}_c &= 21(0.662) = \mathbf{13.9} \text{ } \mu\text{g/L} && [\text{CV} = 1.438, 99^{\text{th}} \text{ Percentile}] \\ \text{LTA}_a &= 32(0.461) = 14.7 \text{ } \mu\text{g/L} && [\text{CV} = 1.438, 99^{\text{th}} \text{ Percentile}]\end{aligned}$$

Use most protective number of LTA_c or LTA_a .

$$\begin{aligned}\text{MDL} &= \mathbf{13.9 (2.17)} = \mathbf{30.2} \text{ } \mu\text{g/L} && [\text{CV} = 1.438, 99^{\text{th}} \text{ Percentile}] \\ \text{AML} &= \mathbf{13.9(1.33)} = \mathbf{18.5} \text{ } \mu\text{g/L} && [\text{CV} = 1.438, 95^{\text{th}} \text{ Percentile, } n = 4]\end{aligned}$$

- **Lead, Total Recoverable.** A RPA was conducted on Lead, Total Recoverable and determined that it does not have a potential to violate Missouri's WQS, please see **Appendix B – RPA Results**; therefore, the limits are being reduced to a monitoring requirement only. Monitoring for this parameter has been removed.
- **Nickel, Total Recoverable.** A RPA was conducted on Nickel, Total Recoverable and determined that it does not have a potential to violate Missouri's WQS, please see **Appendix B – RPA Results**. Monitoring for this parameter has been removed.
- **Silver, Total Recoverable.** A RPA was conducted on Silver, Total Recoverable and determined that it does not have a potential to violate Missouri's WQS, please see **Appendix B – RPA Results**. Monitoring for this parameter has been removed.
- **Zinc, Total Recoverable.** A RPA was conducted on Zinc, Total Recoverable and determined that it does not have a potential to violate Missouri's WQS, please see **Appendix B – RPA Results**. Monitoring for this parameter has been removed.
- **Cyanide, Amenable to Chlorination.** A RPA was conducted on Zinc, Total Recoverable and determined that it does not have a potential to violate Missouri's WQS, please see **Appendix B – RPA Results**. Monitoring for this parameter has been removed.

Part VI: Finding of Affordability

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

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

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

Part VII – Administrative Requirements

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

PUBLIC NOTICE:

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

- The Public Notice period for this operating permit was from May 25, 2012 to June 25, 2012 for this permit modification. Comments were received from the permittee and are summarized below.

1. References to cyanide and pretreatment were removed from the modification.
2. Typographical errors in units in table A have been fixed.
3. Request for sample type for Chromium VI was changed to 24 hr. composite.
4. An oversight in constructing the permit modification regarding dates of data sets used in re-evaluating RPA has been fixed.

DATE OF FACT SHEET: SEPTEMBER 22, 2008;
REVISED: MARCH 19, 2009

COMPLETED BY:
MICHAEL ABBOTT, ENVIRONMENTAL SPECIALIST
NPDES PERMITS UNIT
PERMITTING AND ENGINEERING SECTION
WATER PROTECTION PROGRAM
(573) 526-1139
michael.abbott@dnr.mo.gov

Modified by: Hillary Clark (4/17/2012, 06/26/2012, 06/27/2012)

Appendices

APPENDIX A - CLASSIFICATION WORKSHEET:

| ITEM | POINTS POSSIBLE | POINTS ASSIGNED |
|---|--|-----------------|
| Maximum Population Equivalent (P.E.) served (Max 10 pts.) | 1 pt./10,000 PE or major fraction thereof. | 7.2 |
| Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.) | 1 pt. / MGD or major fraction thereof. | 2.5 |
| EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY: | | |
| Missouri or Mississippi River | 0 | -- |
| All other stream discharges except to losing streams and stream reaches supporting whole body contact | 1 | 1 |
| Discharge to lake or reservoir outside of designated whole body contact recreational area | 2 | -- |
| Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation | 3 | -- |
| PRELIMINARY TREATMENT – Headworks | | |
| Screening and/or comminution | 3 | 3 |
| Grit removal | 3 | 3 |
| Plant pumping of main flow (lift station at the headworks) | 3 | -- |
| PRIMARY TREATMENT | | |
| Primary clarifiers | 5 | 5 |
| Combined sedimentation/digestion | 5 | -- |
| Chemical addition (except chlorine, enzymes) | 4 | -- |
| REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only) | | |
| Lab work conducted outside of plant | 0 | -- |
| Push – button or visual methods for simple test such as pH, Settleable solids | 3 | 3 |
| Additional procedures such as DO, COD, BOD, titrations, solids, volatile content | 5 | -- |
| More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc. | 7 | -- |
| Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph | 10 | -- |
| ALTERNATIVE FATE OF EFFLUENT | | |
| Direct reuse or recycle of effluent | 6 | -- |
| Land Disposal – low rate | 3 | -- |
| High rate | 5 | -- |
| Overland flow | 4 | -- |
| Total from page ONE (1) | ---- | 24.7 |

APPENDIX A - CLASSIFICATION WORKSHEET (CONTINUED):

| ITEM | POINTS POSSIBLE | POINTS ASSIGNED |
|--|-----------------|-----------------|
| VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances) | | |
| Variation do not exceed those normally or typically expected | 0 | 0 |
| Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow | 2 | -- |
| Recurring deviations or excessive variations of more than 200 % in strength and/or flow | 4 | -- |
| Raw wastes subject to toxic waste discharge | 6 | -- |
| SECONDARY TREATMENT | | |
| Trickling filter and other fixed film media with secondary clarifiers | 10 | 10 |
| Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches) | 15 | -- |
| Stabilization ponds without aeration | 5 | -- |
| Aerated lagoon | 8 | -- |
| Advanced Waste Treatment Polishing Pond | 2 | -- |
| Chemical/physical – without secondary | 15 | -- |
| Chemical/physical – following secondary | 10 | -- |
| Biological or chemical/biological | 12 | -- |
| Carbon regeneration | 4 | -- |
| DISINFECTION | | |
| Chlorination or comparable | 5 | -- |
| Dechlorination | 2 | -- |
| On-site generation of disinfectant (except UV light) | 5 | -- |
| UV light | 4 | -- |
| SOLIDS HANDLING – SLUDGE | | |
| Solids Handling Thickening | 5 | -- |
| Anaerobic digestion | 10 | 10 |
| Aerobic digestion | 6 | -- |
| Evaporative sludge drying | 2 | -- |
| Mechanical dewatering | 8 | 8 |
| Solids reduction (incineration, wet oxidation) | 12 | -- |
| Land application | 6 | 6 |
| Total from page TWO (2) | ---- | 34 |
| Total from page ONE (1) | --- | 24.7 |
| Grand Total | --- | 58.7 |

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

APPENDIX B – RPA RESULTS:

| <u>Symbol</u> | <u>Analyte</u> | <u>CMC</u> | <u>RWC Acute</u> | <u>CCC</u> | <u>RWC Chronic</u> | <u>Reasonable</u> | | |
|---------------|-----------------------------|------------|----------------------|------------|------------------------|-------------------|----------|-----------|
| | | | | | | <u>Potential</u> | <u>n</u> | <u>CV</u> |
| Cd | Cadmium, Total Recoverable | 14.56 | 32.01 | 0.59 | 32.01 | YES | 11 | 1.272 |
| Cr III | Chromium (III) | 4239 | 30.25 | 202.65 | 30.25 | NO | 11 | 0.631 |
| Cr VI | Chromium (VI), Dissolved | 15.00 | 30.25 | 10.00 | 30.25 | YES | 11 | 0.631 |
| CN | Cyanide, Amenable to Chlor. | 22.00 | 0.01 | 5.00 | 0.01 | No | 11 | 0.383 |
| Cu | Copper, Total Recoverable | 37.42 | 39.92 | 22.76 | 39.92 | YES | 11 | 0.373 |
| Pb | Lead, Total Recoverable | 308.18 | 10.33 | 12.02 | 10.33 | NO | 11 | 0.393 |
| Ni | Nickel, Total Recoverable | 1135.33 | 17.54 | 126.22 | 17.54 | NO | 10 | 0.287 |
| Zn | Zinc, Total Recoverable | 290.14 | 217.19 | 290.14 | 217.19 | NO | 11 | 0.688 |
| Ag | Silver, Total Recoverable | 22.83 | 6.42 | N/A | N/A | NO | 11 | 0.414 |

ND – Non-detect or below detection limit of analytical test

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

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

*** - Coefficient of Variation (CV) is calculated by dividing the Mean of the sample by the Standard Deviation of the sample.

**** - Please see the Derivation & Discussion portion of this Fact Sheet, data has been compromised and therefore, may not be used.

***** - The Minimum Detection Limit for Lead (per the analytical method) was above the CCC.

† - The CCC and CMC were subjected to the percentage of the proposed Ammonia remaining in the stream; however a reasonable potential still existed including both time of travel models.

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

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

APPENDIX C – AFFORDABILITY ANALYSIS:

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

Operating Permit Renewal
Sedalia North Wastewater Treatment Plant
MO-0023027

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

Description:

POTW – SIC #4952

Two primary clarifiers/two high rate trickling filters/one secondary clarifier/one secondary anaerobic digester/belt press/sludge is land applied by permittee.

Legal Description: SW¼, SW¼, Sec. 28, T46N, R21W, Pettis County

UTM Coordinates: X= 479080.987, Y= 4286747.028

Receiving Stream: Sewer Creek (U)

First Classified Stream and ID: Sewer Branch (C) (860)

USGS Basin & Sub-watershed No.: 10300103-0406

Residential Connections: 1621

Commercial Connections: 372

Total Connections: 2236

New Permit Requirements or Requirements Now Being Enforced:

This is a modification of an operating permit with no new or expanded conditions. The facility has demonstrated its ability to meet these permit limits. Discharge Monitoring Reports (DMRs) provide data that support the Department’s finding that this facility is capable of meeting the final effluent limitations with no new cost.

Range of Anticipated Costs Associated with Complying with Requirements:

This is a modification of an operating permit with no new or expanded conditions that does not involve any significant costs for the permittee.

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

This is a modification for an operating permit with no new or expanded conditions and does not involve any significant costs for the permittee. The community has no need to secure funding or require changes to the rate structure. Therefore, the community shall incur no new costs and financial capability exists.

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

This is a modification for an operating permit with no new or expanded conditions, thus maintaining existing pollution control options. Therefore, no rate increase to individuals or households of the community is required to achieve the pollution control conditions of this permit.

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

This is a modification for an operating permit with no new or expanded conditions, thus maintaining existing overall costs and environmental benefits. There will be no new costs or environmental benefits of control technologies unless the facility initiates technology upgrades.

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

- (a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations; and*
- (b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained;*

This is a modification for an operating permit with no new or expanded conditions, thus no implementation schedule is required. No improvements are necessary, resulting in no new economic impacts on distressed populations and no other new cost burden.

The facility has demonstrated the ability to comply with the conditions in the permit, avoiding any violations or fines that would result in financial hardships.

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

This is a modification for an operating permit with no new environmental improvements; therefore, it will not affect the timing or funding of other community investments.

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

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

This is a modification for an operating permit with no new or expanded conditions. Existing efforts to control combined sewer overflows and wet weather flows at the facility are sufficient to meet the requirements of this permit. No new cost burden exists.

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

This is a modification for an operating permit with no new or expanded conditions. It creates no new cost burden that could be affected by local economic conditions.

Sedalia's population has increased 8.02% from 1990 to 2010. In terms of economic strength, Pettis County is average when compared to other counties in the State. The percentage of labor force is 5% below the State average, the per capita wealth¹ is 23% below the State average and the per capita income is 18% below the State's average.

In terms of retail sales, Pettis County has gained retail customers from surrounding counties and the County residents spend more than the state average on retail goods and services. The buying power index of Pettis County residents is better than average compared to the rest of the regional economy².

Conclusion and Finding

This is a modification for an operating permit with no new or expanded conditions. The facility is currently capable of meeting the permit requirements. No new cost burden exists.

As a result of reviewing the above criteria, the Department hereby finds that the action described above will result in low or no burden with regard to the community's overall financial capability and low or no financial impact for most individual customers/households

¹ Per capita wealth is calculated by taking a sum of appraised value of residential property, mobile homes and motor vehicles and this sum is then divided by County population.

² http://www.missourieconomy.org/pdfs/wc_wia_retail_trade_analysis.pdf