

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-0101567

Owner: City of Sedalia
Address: P.O. Box 1707, Sedalia, MO 65301

Continuing Authority: Same as above
Address: Same as above

Facility Name: Sedalia Southeast Wastewater Treatment Plant
Facility Address: 26999 Goodwill Chapel Rd., Sedalia, MO 65301

Legal Description: SW¹/₄, SW¹/₄, Sec. 13, T45N, R21W, Pettis County
UTM Coordinates: X= 483425.017, Y= 4279952.450

Receiving Stream: Breakfast Branch (U)
First Classified Stream and ID: Flat Creek (P) (0864)
USGS Basin & Sub-watershed No.: (10300103-0301)

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

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 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

May 1, 2013
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

September 30, 2015
Expiration Date

John Madras, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #001 – POTW – SIC #4952

The use or operation of this facility shall be by or under the supervision of a **Certified “C” Operator**.

Extended aeration/intra-channel clarifier/dual aeration & clarification basin/peak flow clarifier/sludge thickener basin and sludge storage basin/sludge is composted and land applied.

Design population equivalent is 22,478

Design flow is 2.6 MGD.

Actual flow is 1.4 MGD.

Peak Design flow is 6.5 MGD.

Design sludge production is 418 dry tons/year.

Actual sludge production is 295 dry tons/year.

SM1 – Downstream Monitoring – This monitoring point has been eliminated from the permit. Data shows no adverse water quality effects; therefore downstream monitoring is no longer required.

OUTFALL #001	TABLE A-2. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS			PAGE NUMBER 3 of 7		
				PERMIT NUMBER MO-0101567		
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:						
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/day	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L		45	30	once/week	composite**
Total Suspended Solids	mg/L		45	30	once/week	composite**
<i>E. coli</i> (Note 1, Page 3)	#/100 ml		1030	206	once/week	grab
pH – Units	SU	***		***	once/week	grab
Ammonia as N (April 1 – Sept 30) (Oct 1 – March 31)	mg/L	3.7 10.2		1.4 2.7	once/week	grab
Oil & Grease	mg/L	15		10	once/month	grab
Copper, Total Recoverable	µg/L	*		*	once/month	grab
Zinc, Total Recoverable	µg/L	*		*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>JUNE 28, 2013</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 #18		once/permit cycle	24-hr Composite	
MONITORING REPORTS SHALL BE SUBMITTED <u>ONCE/PERMIT CYCLE</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2015</u> .						

* 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.

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

TABLE B. INFLUENT MONITORING REQUIREMENTS		PAGE NUMBER 4 of 7	
		PERMIT NUMBER MO-0101567	
The facility is required to meet a removal efficiency of 85% or more as a monthly average. The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:			
SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand ₅	mg/L	once/month	grab
Total Suspended Solids	mg/L	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>JUNE 28, 2013</u> .			

C. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I, II, & III standard conditions dated October 1, 1980 and August 15, 1994, and hereby incorporated as though fully set forth herein.

D. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.
4. Water Quality Standards
 - (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
 - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;

D. SPECIAL CONDITIONS (continued)

- (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.

5. Changes in Discharges of Toxic Substances

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

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established by the Director in accordance with 40 CFR 122.44(f).
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

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

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

8. The permittee shall comply with any applicable requirements listed in 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.

9. The permittee shall develop and implement a program for maintenance and repair of the collection system. The permittee shall submit a report semi-annual in April & 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 for the previous year.

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

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

12. A least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain locked except when opened by the permittee to perform operational monitoring, sampling, maintenance, mowing, or for inspections by the Department.

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

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

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

D. SPECIAL CONDITIONS (continued)

16. The discharge from the wastewater treatment facility shall be conveyed to the receiving stream via a closed pipe or a paved or riprapped open channel. Sheet or meandering drainage is not acceptable. The outfall sewer shall be protected against the effects of floodwater, ice or other hazards as to reasonably insure its structural stability and freedom from stoppage. The outfall shall be maintained so that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.
17. Land application of biosolids shall be conducted in accordance with Standard Conditions III and a Department approved biosolids management plan. Land application of biosolids during frozen, snow covered, or saturated soil conditions in accordance with the additional requirements specified in WQ426 shall occur only with prior notification to the Kansas City Regional Office.
18. 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%	Once/permit cycle	24 hr. composite*	Any

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

Dilution Series							
AEC% = 100%	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.
 - (i) 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.
 - (ii) 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.
 - (iii) 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.

D. SPECIAL CONDITIONS (continued)

- (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.
 - (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

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0101567
SEDALIA SOUTHEAST WASTEWATER TREATMENT PLANT**

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

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

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

This Factsheet is for a Major

Part I – Facility Information

Facility Type: POTW - SIC #4952

Facility Description:

Extended aeration/intra-channel clarifier/dual aeration & clarification basin/peak flow clarifier/sludge thickener basin and sludge storage basin/sludge is composted and land applied.

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

- No.

Application Date: 10/30/2012

Expiration Date: 04/03/2013

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
#001	4.03	Primary	Domestic, Municipal	~ 0.97

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

This facility was last inspected on June 1, 2012. The conditions of the facility at the time of inspection were found to be satisfactory. However, the facility was sighted for construction without a permit.

Comments:

This facility is currently under enforcement for unauthorized discharges of wastewater to waters of the state.

Part II – Operator Certification Requirements

Applicable ; This facility is required to have a certified operator.

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 20-9.020(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

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200) and/or fifty (50) or more service connections.

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

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

Operator's Name: Philip G. Webster
 Certification Number: 3248
 Certification Level: WW – A

The listing of the operator above only signifies that staff drafting this operating permit have reviewed appropriate Department records and determined that the name listed on the operating permit application has the correct and applicable Certification Level.

Part III– Operational Monitoring

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

Part IV – Receiving Stream Information

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

RECEIVING STREAM(S) TABLE:

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	EDU**
Breakfast Branch	U	----	General Criteria	010300103-0301	Central Plains/ Blackwater/Lamine
Flat Creek	P	0864	LWW, AQL, SCR , 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

MIXING CONSIDERATIONS

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:

No receiving water monitoring requirements recommended at this time.

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

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

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

ANTI-BACKSLIDING:

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

- All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply.

ANTIDegradation:

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

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

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

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

BIOSOLIDS & SEWAGE SLUDGE:

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

<http://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

- Permittee land applies biosolids in accordance with Standard Conditions III and a Department approved biosolids 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.

Applicable : The permittee/facility is currently under enforcement action due to unauthorized discharges of wastewater to waters of the state.

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 CFR 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.

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

Applicable : A RPA was conducted on appropriate parameters. Please see **APPENDIX – 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.

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

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

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

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

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

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

SCHEDULE OF COMPLIANCE (SOC):

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 ; This permit does not contain a SOC.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP): FOR SITES WITH SIGNIFICANT EXPOSED MATERIALS

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

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

VARIANCE:

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

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

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

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

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

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

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

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

Number of Samples "n":

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

WLA MODELING:

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

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

WATER QUALITY STANDARDS:

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

WHOLE EFFLUENT TOXICITY (WET) TEST:

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

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

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- Facility (industrial) that alters its production process throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH₃)
- Facility is a municipality or domestic discharger with a Design Flow \geq 22,500 gpd.
- Other – please justify.

40 CFR 122.41(M) - BYPASSES:

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

Not Applicable ; This facility does not anticipate bypassing.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

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 ; Flat Creek is listed on the 2006 Missouri 303(d) List for Sediment and TSS.

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

Part VI – Effluent Limits Determination

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

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

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

OUTFALL #001 – MAIN FACILITY OUTFALL

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

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Modified	Previous Permit Limitations
Flow	MGD	1	*		*	NO	*/*
BOD ₅	mg/L	1, 4		45	30	NO	45/30
TSS	mg/L	1, 4		45	30	NO	45/30
pH	SU	1, 4	6.5		9.0	NO	6.5/9.0
Ammonia as N (April 1 – Sept 30)	mg/L	2, 3, 5	3.7		1.4	NO	3.7/1.4
Ammonia as N (Oct 1 – March 31)	mg/L	2, 3, 5	10.2		2.7	YES	10.3/2.8
Escherichia coli	***	1, 3		1030	206	NO	1030/206
Oil & Grease (mg/L)	mg/L	1, 3	15		10	NO	15/10
Copper, Total Recoverable	µg/L	2,3	*		*	YES	31.7/18.1
Zinc, Total Recoverable	µg/L	2,3	*		*	YES	15.4-4.6
Whole Effluent Toxicity (WET) Test	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.				

* - Monitoring requirement only.

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

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

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

Basis for Limitations Codes:

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

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD₅).**
 – Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.
- **Total Suspended Solids (TSS).**
 – Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.

- **pH.** Effluent limitation range is ≥ 6.5 or 6.5 – 9.0 Standard pH Units (SU), as per the applicable section of 10 CSR 20-7.015. pH is not to be averaged.
- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU Background total ammonia nitrogen = 0.01 mg/L.

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

Summer: April 1 – September 30

Chronic WLA: $C_e = ((4.03 + 0.0)1.5 - (0.0 * 0.01))/4.03$
 $C_e = 1.5 \text{ mg/L}$

Acute WLA: $C_e = ((4.03 + 0.0)12.1 - (0.0 * 0.01))/4.03$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L (0.774)} = \mathbf{1.16 \text{ mg/L}}$

[CV = 0.620, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L (0.312)} = 3.78 \text{ mg/L}$

[CV = 0.620, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 1.16 mg/L (3.20) = 3.7 mg/L

[CV = 0.620, 99th Percentile]

AML = 1.16 mg/L (1.20) = 1.4 mg/L

[CV = 0.620, 95th Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((4.03 + 0.0)3.1 - (0.0 * 0.01))/4.03$
 $C_e = 3.1 \text{ mg/L}$

Acute WLA: $C_e = ((4.03 + 0.0)12.1 - (0.0 * 0.01))/4.03$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L (0.666)} = 2.1 \text{ mg/L}$

[CV = 1.006, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L (0.203)} = 2.4 \text{ mg/L}$

[CV = 1.006, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 2.1 mg/L (4.93) = 10.2 mg/L

[CV = 1.006, 99th Percentile]

AML = 2.1 mg/L (1.33) = 2.7 mg/L

[CV = 1.006, 95th Percentile, n =26]

- ***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.

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the “Technical Support Document For Water Quality-based Toxic Controls” (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 a water hardness of 257 mg/L is used in the conversion below.

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
Chromium VI	0.982	0.962
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 = 257 mg/L.

- **Chromium III, Total Recoverable** A RPA was conducted for Chromium III and was found to have no Reasonable Potential. Due to the amount of data points being non-detect Chromium III has been removed from the permit.
- **Chromium VI, Total Recoverable**. A RPA was conducted for Hexavalent Chromium and was found to have no Reasonable Potential. Due to the amount of data points being non-detect Hexavalent Chromium has been removed from the permit.
- **Copper, Total Recoverable**. A RPA was conducted for Copper and was found to have no Reasonable Potential at this time; however a monitoring only requirement will remain in the permit to assess the concentration of copper in the effluent.
- **Lead, Total Recoverable** A RPA was conducted for Lead and was found to have no Reasonable Potential. Due to the amount of data points being non-detect Lead has been removed from the permit.
- **Nickel, Total Recoverable** A RPA was conducted for Nickel and was found to have no Reasonable Potential. Due to the amount of data points being non-detect Nickel has been removed from the permit.
- **Silver, Total Recoverable** A RPA was conducted for Silver and was found to have no Reasonable Potential. Due to the amount of data points being non-detect Silver has been removed from the permit.
- **Zinc, Total Recoverable**. A RPA was conducted for Zinc and was found to have no Reasonable Potential at this time; however a monitoring only requirement will remain in the permit to assess the concentration of zinc in the effluent
- **WET Test**. WET Testing schedules and intervals are established in accordance with the Department’s Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

Acute

No less than ONCE/PERMIT CYCLE:

Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD; However, the facility has passed all WET Test for the past five years, therefore WET Testing has been reduced to once per permit cycle.

Part VII – 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.

While this permit contains new, lower effluent limits for Copper based on site specific hardness data submitted by the permittee, these new limits do not represent significant costs for the permittee. Domestic wastewater treatment facilities are not designed to remove metals such as Copper, therefore no capital improvements are necessitated by this new effluent limit. The facility will adjust local limits for industrial contributors and ensure compliance via requiring contributors meet minimum standards before discharging into the sewer system.

Part VIII – 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 requester and permittee must be notified of the denial in writing.

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

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

- The Public Notice period for this operating permit was originally from January 11 to February 11, 2013, but was extended to February 26, 2013 for additional time to review changes to the permit. A summary of the comments and actions are listed below:

1. The City requested that blending language be removed from the fact sheet. This wording was removed from the fact sheet.
2. The City requested a SOC for disinfection. This schedule was not granted since the compliance date for disinfection is not until December 31, 2013.
3. The City requested that influent sampling for BOD₅ and TSS be changed from monthly to quarterly. This request could not be granted due to the size of the facility.
4. The City requested that the working in Special Condition #9 be changed to be consistent with the language contained in the AOC. This request was granted.
5. The City requested the wording in the comment section of the fact sheet regarding enforcement action be changed to reflect the same language contained in the AOC. This request was granted.

DATE OF FACT SHEET: 04/11/2013

COMPLETED BY:

**HILLARY CLARK, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(573) 751-7326
Hillary.Clark@dnr.mo.gov**

Appendices

APPENDIX - 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.	2
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	6.5
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	
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	3
PRELIMINARY TREATMENT – Headworks		
Screening and/or comminution	3	
Grit removal	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)		
Push – button or visual methods for simple test such as pH, Settleable solids	3	
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	7
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
ALTERNATIVE FATE OF EFFLUENT		
Direct reuse or recycle of effluent	6	
Land Disposal – low rate	3	
High rate	5	
Overland flow	4	
Total from page ONE (1)	----	23.5

APPENDIX - 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	
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow	2	
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	
Raw wastes subject to toxic waste discharge	6	
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers	10	
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	15
Stabilization ponds without aeration	5	
Aerated lagoon	8	
Advanced Waste Treatment Polishing Pond	2	
Chemical/physical – without secondary	15	
Chemical/physical – following secondary	10	
Biological or chemical/biological	12	
Carbon regeneration	4	
DISINFECTION		
Chlorination or comparable	5	
Dechlorination	2	
On-site generation of disinfectant (except UV light)	5	
UV light	4	
SOLIDS HANDLING - SLUDGE		
Solids Handling Thickening	5	5
Anaerobic digestion	10	
Aerobic digestion	6	
Evaporative sludge drying	2	
Mechanical dewatering	8	
Solids reduction (incineration, wet oxidation)	12	
Land application	6	6
Total from page TWO (2)	----	26
Total from page ONE (1)	---	23.5
Grand Total	---	49.5

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

APPENDIX – RPA RESULTS:

Symbol	Analyte	CMC	RWC Acute	CCC	RWC Chronic	Reasonable Potential	n	CV
NH3	Total Ammonia as Nitrogen (Summer) in mg/L	12.10	5.08	1.50	4.79	YES	30	0.619831
NH3	Total Ammonia as Nitrogen (Winter) in mg/L	12.10	22.82	3.10	21.50	YES	26	1.983325
Cr III	Chromium (III), Total Recoverable	3906.35	0.37	186.73	0.37	NO	45	1.983325
Cr VI	Chromium (VI), Dissolved	15.00	0.44	10.00	0.44	NO	44	2.620091
Cu	Copper, Total Recoverable	34.06	0.04	20.90	0.04	NO	55	0.429387
Pb	Lead, Total Recoverable	271.38	0.01	10.58	0.01	NO	44	0.358183
Ni	Nickel, Total Recoverable	1043.32	0.37	1044.37	0.37	NO	46	2.00742
Zn	Zinc, Total Recoverable	266.60	0.54	266.60	0.54	NO	53	0.773148
Ag	Silver, Total Recoverable	19.23	0.19	N/A	N/A	NO	46	2.014799

N/A – Not Applicable

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

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

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

RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).

n – Is the number of samples.

MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.

RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

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.

Per Curt Gately Unit #05152
 Returned due to No Fee Due At
 time of Renewal. AP 131089



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
**FORM B2 – APPLICATION FOR CONSTRUCTION OR OPERATING
 PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC
 WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS
 PER DAY**

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
10/30/12	0 SB

PART A – BASIC APPLICATION INFORMATION

1. This application is for:

An operating permit and antidegradation review public notice.

A construction permit following an appropriate operating permit and antidegradation review public notice.

A construction permit, a concurrent operating permit and antidegradation review public notice.

A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required).

An operating permit for a new or unpermitted facility. Construction Permit # _____

An operating permit renewal: Permit #MO- 010567 0101567 Expiration Date 04/03/2013

An operating permit modification: Permit #MO- _____ Reason: _____

1.1 Is this a Federal/State Funded Project? Yes No Funding Agency/Project #: _____

1.2 Is the appropriate fee included with the application (See instructions for appropriate fee)? Yes No

2. FACILITY

NAME Sedalia Southeast Wastewater Treatment Plant		TELEPHONE NUMBER WITH AREA CODE (660)827-3000	
ADDRESS (PHYSICAL) 26999 Goodwill Chapel Road	CITY Sedalia	STATE MO	ZIP 65301
2.1 LEGAL DESCRIPTION (Plant Site):	¼, SW ¼, SW ¼, Sec. +38, T, R 21W County Pettis		
2.2 UTM Coordinates Easting (X):	+3840048 Northing (Y): -09311259 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)		

3. OWNER City of Sedalia, Missouri

NAME Bill Beck	TITLE Director of Public Works	TELEPHONE NUMBER WITH AREA CODE (660)827-3000	
ADDRESS 200 S. Osage	CITY Sedalia	STATE MO	ZIP 65301

3.1 Request review of draft permit prior to Public Notice? Yes No

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

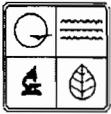
NAME City of Sedalia, Missouri	CITY Sedalia
ADDRESS 200 S. Osage	CERTIFICATE NUMBER (IF APPLICABLE) 3248
STATE MO	ZIP 65301

5. OPERATOR

NAME Phil Webster	TITLE Manager	TELEPHONE NUMBER WITH AREA CODE (660) 827-7830
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6. FACILITY CONTACT

NAME Phil Webster	TITLE Manager
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
FORM B2 – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

RECEIVED

FACILITY NAME

Sedalia Southeast Wastewater Treatment Plant

PERMIT NO.

MO-0101567

COUNTY

Pettis

OCT 29 2012

APPLICATION OVERVIEW

WATER PROTECTION PROGRAM

Form B2 has been developed in a modular format and consists of Parts A, B and C and a Supplemental Application Information (Parts D, E, F and G) packet. All applicants must complete Parts A, B and C. Some applicants must also complete parts of the Supplemental Application Information packet. The following items explain which parts of Form B2 you must complete. Submittal of an incomplete application may result in the application being returned.

BASIC APPLICATION INFORMATION

- A. Basic Application Information for all Applicants. All applicants must complete Part A.
- B. Additional Application Information for all Applicants. All applicants must complete Part B.
- C. Certification. All applicants must complete Part C.

SUPPLEMENTAL APPLICATION INFORMATION

- D. Expanded Effluent Testing Data. A treatment works that discharges effluent to surface water of the United States and meets one or more of the following criteria must complete *Part D - Expanded Effluent Testing Data*:
 - 1. Has a design flow rate greater than or equal to 1 million gallons per day.
 - 2. Is required to have or currently has a pretreatment program.
 - 3. Is otherwise required by the permitting authority to provide the information.
- E. Toxicity Testing Data. A treatment works that meets one or more of the following criteria must complete *Part E - Toxicity Testing Data*:
 - 1. Has a design flow rate greater than or equal to 1 million gallons per day.
 - 2. Is required to have or currently has a pretreatment program.
 - 3. Is otherwise required by the permitting authority to provide the information.
- F. Industrial User Discharges and Resource Conservation and Recovery Act / Comprehensive Environmental Response, Compensation and Liability Act Wastes. A treatment works that accepts process wastewater from any significant industrial users, also known as SIUs, or receives a Resource Conservation and Recovery Act or CERCLA wastes must complete *Part F - Industrial User Discharges and Resource Conservation and Recovery Act /CERCLA Wastes*.

 SIUs are defined as:
 - 1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N.
 - 2. Any other industrial user that meets one or more of the following:
 - i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
 - ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
 - iii. Is designated as an SIU by the control authority.
- G. Combined Sewer Systems. A treatment works that has a combined sewer system must complete *Part G - Combined Sewer Systems*.

ALL APPLICANTS MUST COMPLETE PARTS A, B and C

FACILITY NAME Sedalia Southeast WWTP		PERMIT NO. MO- 0101567		OUTFALL NO. 001	
PART A – BASIC APPLICATION INFORMATION					
7. ADDITIONAL FACILITY INFORMATION					
7.1 BRIEF DESCRIPTION OF FACILITIES Extended aeration; intra-channel clarifier; dual aeration & clarification basin; peak flow clarifier; sludge thickener basin and sludge storage basin; sludge is composted and land applied.					
7.2 TOPOGRAPHIC MAP. ATTACH TO THIS APPLICATION A TOPOGRAPHIC MAP OF THE AREA EXTENDING AT LEAST ONE MILE BEYOND FACILITY PROPERTY BOUNDARIES. THIS MAP MUST SHOW THE OUTLINE OF THE FACILITY AND THE FOLLOWING INFORMATION. (YOU MAY SUBMIT MORE THAN ONE MAP IF ONE MAP DOES NOT SHOW THE ENTIRE AREA.) a. The area surrounding the treatment plant, including all unit processes. b. The location of the downstream landowner(s). (See Item 10.) c. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable. d. The actual point of discharge. e. Wells, springs, other surface water bodies and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant. f. Any areas where the sewage sludge produced by the treatment works is stored, treated or disposed. g. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act, or RCRA, by truck, rail or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored or disposed.					
7.3 PROCESS FLOW DIAGRAM OR SCHEMATIC. PROVIDE A DIAGRAM SHOWING THE PROCESSES OF THE TREATMENT PLANT. ALSO, PROVIDE A WATER BALANCE SHOWING ALL TREATMENT UNITS, INCLUDING DISINFECTION (E.G. CHLORINATION AND DECHLORINATION). THE WATER BALANCE MUST SHOW DAILY AVERAGE FLOW RATES AT INFLUENT AND DISCHARGE POINTS AND APPROXIMATE DAILY FLOW RATES BETWEEN TREATMENT UNITS. INCLUDE A BRIEF NARRATIVE DESCRIPTION OF THE DIAGRAM.					
7.4 FACILITY SIC CODE 4952	DISCHARGE SIC CODE:		FACILITY NAICS CODE:	DISCHARGE NAICS CODE:	
7.5 NUMBER OF SEPARATE DISCHARGE POINTS 1					
7.6 NUMBER OF PEOPLE PRESENTLY CONNECTED OR POPULATION EQUIVALENT 14,000				DESIGN POPULATION EQUIVALENT 22,478	
NUMBER OF UNITS PRESENTLY CONNECTED HOMES _____ APARTMENTS _____ TRAILERS _____ OTHER _____					
TOTAL DESIGN FLOW (ALL OUTFALLS) 2.6 MGD; 6.5 MGD Peak			ACTUAL FLOW 1.4 MGD		
7.7 DOES ANY BYPASSING OCCUR ANYWHERE IN THE COLLECTION SYSTEM OR AT THE TREATMENT FACILITY? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (If Yes, attach an explanation.)					
7.8 LENGTH OF THE SANITARY SEWER COLLECTION SYSTEM IN MILES 65 miles					
7.9 IS INDUSTRIAL WASTE DISCHARGED TO THE FACILITY IDENTIFIED IN ITEM 2? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
7.10 WILL THE DISCHARGE BE CONTINUOUS THROUGH THE YEAR? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
A. DISCHARGE WILL OCCUR DURING THE FOLLOWING MONTHS			B. HOW MANY DAYS OF THE WEEK WILL THE DISCHARGE OCCUR?		
7.11 IS WASTEWATER LAND APPLIED? (If Yes, Attach Form I) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			7.12 DOES THIS FACILITY DISCHARGE TO A LOSING STREAM OR SINKHOLE? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
7.13 HAS A WASTE LOAD ALLOCATION STUDY BEEN COMPLETED FOR THIS FACILITY? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					
7.14 LIST ALL PERMIT VIOLATIONS, INCLUDING EFFLUENT LIMIT EXCEEDANCES IN THE LAST FIVE YEARS. ATTACH A SEPARATE SHEET IF NECESSARY. IF NONE, WRITE NONE.					
8. LABORATORY CONTROL INFORMATION					
8.1 LABORATORY WORK CONDUCTED BY PLANT PERSONNEL					
Lab work conducted outside of plant.				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Push-button or visual methods for simple test such as pH, settleable solids.				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Additional procedures such as Dissolved Oxygen, Chemical Oxygen Demand, Biological Oxygen Demand, titrations, solids, volatile content.				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph.				Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

FACILITY NAME Sedalia Southeast WWTP	PERMIT NO. MO- 0101567	OUTFALL NO. 001
PART A – BASIC APPLICATION INFORMATION		
9. SLUDGE HANDLING, USE AND DISPOSAL		
9.1 IS THE SLUDGE A HAZARDOUS WASTE AS DEFINED BY 10 CSR 25? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
9.2 SLUDGE PRODUCTION, INCLUDING SLUDGE RECEIVED FROM OTHERS Design Dry Tons/Year ⁴¹⁸		Actual Dry Tons/Year 235
9.3 CAPACITY OF SLUDGE HOLDING STRUCTURES		
9.4 SLUDGE STORAGE PROVIDED Cubic Feet ⁴³²⁰ Days of Storage ⁷ Average Percent Solids of Sludge ¹⁹ <input type="checkbox"/> No Sludge Storage is Provided		
9.5 TYPE OF STORAGE <input type="checkbox"/> Holding Tank <input type="checkbox"/> Basin <input type="checkbox"/> Building <input checked="" type="checkbox"/> Concrete Pad <input type="checkbox"/> Other (Describe) _____		
9.6 SLUDGE TREATMENT <input type="checkbox"/> Anaerobic Digester <input type="checkbox"/> Storage Tank <input type="checkbox"/> Lime Stabilization <input type="checkbox"/> Lagoon <input type="checkbox"/> Aerobic Digester <input type="checkbox"/> Air or Heat Drying <input checked="" type="checkbox"/> Composting <input type="checkbox"/> Other (Attach Description)		
9.7 SLUDGE USE OR DISPOSAL <input checked="" type="checkbox"/> Land Application <input type="checkbox"/> Contract Hauler <input type="checkbox"/> Hauled to Another Treatment Facility <input type="checkbox"/> Solid Waste Landfill <input type="checkbox"/> Surface Disposal (Sludge Disposal Lagoon, Sludge Held For More Than Two Years) <input type="checkbox"/> Incineration <input type="checkbox"/> Other (Attach Explanation Sheet) _____		
9.8 PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY		
NAME By Applicant		
ADDRESS	CITY	STATE ZIP
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO MO-
9.9 SLUDGE USE OR DISPOSAL FACILITY <input checked="" type="checkbox"/> By Applicant <input type="checkbox"/> By Others (Complete Below)		
NAME		
ADDRESS	CITY	STATE ZIP
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO MO-
9.10 DO THE SLUDGE OR BIOSOLIDS DISPOSAL COMPLY WITH FEDERAL SLUDGE REGULATIONS UNDER 40 CFR 503? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Attach Explanation)		
10. DOWNSTREAM LANDOWNER(S). (ATTACH ADDITIONAL SHEETS AS NECESSARY.)		
NAME Alice L & Emmett W. Fairfax		
ADDRESS 27255 Goodwill Chapel Rd	CITY Sedalia	STATE ZIP MO 65301
11. DRINKING WATER SUPPLY INFORMATION		
11.1 SOURCE OF YOUR DRINKING WATER SUPPLY		
A. PUBLIC SUPPLY (MUNICIPAL OR WATER DISTRICT WATER) (IF PUBLIC, PLEASE GIVE NAME OF PUBLIC SUPPLY)		
B. PRIVATE WELL Yes		
C. SURFACE WATER (LAKE, POND OR STREAM)		
11.2 DOES YOUR DRINKING WATER SOURCE SERVE AT LEAST 25 PEOPLE AT LEAST 60 DAYS PER YEAR (NOT NECESSARILY CONSECUTIVE DAYS)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
11.3 DOES YOUR SUPPLY SERVE HOUSING THAT IS OCCUPIED YEAR ROUND BY THE SAME PEOPLE? THIS DOES NOT INCLUDE HOUSING THAT IS OCCUPIED SEASONALLY? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
END OF PART A		

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL			
FACILITY NAME Sedalia Southeast WWTP		PERMIT NO. MO- 0101567	OUTFALL NO. 001
PART B – ADDITIONAL APPLICATION INFORMATION			
20. INFLOW AND INFILTRATION See Attached			
ESTIMATE THE AVERAGE NUMBER OF GALLONS PER DAY THAT FLOW INTO THE TREATMENT WORKS FROM INFLOW AND INFILTRATION. Gallons Per Day			
BRIEFLY EXPLAIN ANY STEPS UNDERWAY OR PLANNED TO MINIMIZE INFLOW AND INFILTRATION.			
20.1 OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)			
ARE ANY OPERATIONAL OR MAINTENANCE ASPECTS (RELATED TO WASTEWATER TREATMENT AND EFFLUENT QUALITY) OF THE TREATMENT WORKS THE RESPONSIBILITY OF A CONTRACTOR? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If Yes, list the name, address, telephone number and status of each contractor and describe the contractor's responsibilities. (Attach additional pages if necessary.)			
NAME Phil Webster - Alliance Water Resources			
MAILING ADDRESS 200 S Osage, Sedalia, MO 65301			
TELEPHONE NUMBER WITH AREA CODE 660-827-7830			
RESPONSIBILITIES OF CONTRACTOR Managment of treatment facility operations			
20.2 SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION. PROVIDE INFORMATION ABOUT ANY UNCOMPLETED IMPLEMENTATION SCHEDULE OR UNCOMPLETED PLANS FOR IMPROVEMENTS THAT WILL AFFECT THE WASTEWATER TREATMENT, EFFLUENT QUALITY OR DESIGN CAPACITY OF THE TREATMENT WORKS. IF THE TREATMENT WORKS HAS SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES OR IS PLANNING SEVERAL IMPROVEMENTS, SUBMIT SEPARATE RESPONSES FOR EACH. (IF NONE, GO TO QUESTION B-20.3.)			
A. List the outfall number that is covered by this implementation schedule Outfall No. 001		B. Indicate whether the planned improvements or implementation schedule are required by local, state or federal agencies. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
20.3 WASTEWATER DISCHARGES: COMPLETE QUESTIONS 20.4 THROUGH 20.7 ONCE FOR EACH OUTFALL (INCLUDING BYPASS POINTS) THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION ON COMBINED SEWER OVERFLOWS IN THIS SECTION.			
20.4 DESCRIPTION OF OUTFALL			
OUTFALL NUMBER 001			
A. LOCATION ¼ _____ ¼ ^{sw} _____ ¼ ^{sw} _____ Section <u>13</u> Township <u>45N</u> Range <u>21</u> <input type="checkbox"/> E <input checked="" type="checkbox"/> W UTM Coordinates Easting (X): <u>3840048</u> Northing (Y): <u>09311259</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)			
B. Distance from Shore (If Applicable) _____ ft.		C. Depth Below Surface (If Applicable) _____ ft.	D. Average Daily Flow Rate <u>1.4</u> mgd
E. Does this outfall have either an intermittent or periodic discharge? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Provide the following information:			
Number of Days Per Year Discharge Occurs: 365	Average Duration of Each Discharge:	Average Flow Per Discharge: mgd	Months in Which Discharge Occurs:
Is Outfall Equipped with a Diffuser? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
20.5 DESCRIPTION OF RECEIVING WATER			
B. Name of Receiving Water Breakfast Branch			
B. Name of Watershed (If Known)		U.S. Soil Conservation Service 14-Digit Watershed Code (If Known) 10300103-010004	
B. Name of State Management/River Basin (If Known)		U.S. Geological Survey 8-Digit Hydrologic Cataloging Unit Code (If Known)	
B. Critical Flow of Receiving Stream (If Applicable) Acute _____ cfs Chronic _____ cfs		B. Total Hardness of Receiving Stream at Critical Low Flow (If Applicable) mg/L of CaCO ₃ see attached hardness data	

MO 780-1805 (09-08)

FACILITY NAME Sedalia Southeast WWTP	PERMIT NO. MO- 0101567	OUTFALL NO. 01
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PART B – ADDITIONAL APPLICATION INFORMATION (CONTINUED)

20.6 DESCRIPTION OF TREATMENT

A. WHAT LEVELS OF TREATMENT ARE PROVIDED? Check All That Apply
 Primary Secondary Advanced Other (Describe)

B. INDICATE THE FOLLOWING REMOVAL RATES (AS APPLICABLE)
 Design BOD₅ Removal Or Design CBOD₅ Removal 85 % Design SS Removal 85 %
 Design P Removal ___ % Design N Removal ___ % Other ___ %

C. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe:

If disinfection is by chlorination, is dechlorination used for this outfall? Yes No

Does the treatment plant have post aeration? Yes No

20.7 EFFLUENT TESTING DATA. ALL APPLICANTS THAT DISCHARGE TO WATERS OF THE U.S. MUST PROVIDE EFFLUENT TESTING DATA FOR THE FOLLOWING PARAMETERS. PROVIDE THE INDICATED EFFLUENT DATA FOR EACH OUTFALL THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION OF COMBINED SEWER OVERFLOWS IN THIS SECTION. ALL INFORMATION REPORTED MUST BE BASED ON DATA COLLECTED THROUGH ANALYSIS CONDUCTED USING 40 CFR PART 136 METHODS. IN ADDITION, THIS DATA MUST COMPLY WITH QA/QC REQUIREMENTS OF 40 CFR PART 136 AND OTHER APPROPRIATE QA/QC REQUIREMENTS FOR STANDARD METHODS FOR ANALYTES NOT ADDRESSED BY 40 CFR PART 136.

OUTFALL NUMBER

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	VALUE	UNITS	VALUE	UNITS	NO. OF SAMPLES
pH (Minimum)	6.7	S.U.	7.4	S.U.	1146
pH (Maximum)	7.9	S.U.	7.4	S.U.	1146
FLOW RATE	12.000	MGD	2.355	MGD	1705
TEMPERATURE (Winter)	20	°C	13	°C	556
TEMPERATURE (Summer)	25	°C	20	°C	553

*For pH report a minimum and a maximum daily value.

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
	CONC.	UNITS	CONC.	UNITS	NO. OF SAMPLES		

Conventional and Nonconventional Compounds

BIOCHEMICAL OXYGEN DEMAND (Report One)	BOD ₅	45	mg/L	12	mg/L	166	SM5210B	
	CBOD ₅		mg/L		mg/L			
FECAL COLIFORM	See Attach	#/100 mL			#/100 mL			
TOTAL SUSPENDED SOLIDS (TSS)	45	mg/L	13	mg/L	208	SM2540D		
AMMONIA (AS N)	See Attach	mg/L		mg/L		SM4500-NH3-N	2.5 mg/L	
CHLORINE (TOTAL RESIDUAL, TRC)		mg/L		mg/L				
DISSOLVED OXYGEN	10.6	mg/L	7.8	mg/L	1150	SM4500-O G		
TOTAL KJELDAHL NITROGEN (TKN)		mg/L		mg/L				
NITRATE PLUS NITRITE NITROGEN		mg/L		mg/L				
OIL AND GREASE	7.8	mg/L	1.9	mg/L	29	EPA1664A		
PHOSPHORUS (TOTAL)		mg/L		mg/L				
TOTAL DISSOLVE SOLIDS (TDS)		mg/L		mg/L				
OTHER		mg/L		mg/L				

END OF PART B

PART C - CERTIFICATION

30. CERTIFICATION

All applicants must complete the Certification Section. This certification must be signed by an officer of the company or city official. All applicants must complete all applicable sections as explained in the Application Overview. By signing this certification statement, applicants confirm that they have reviewed the entire form and have completed all sections that apply to the facility for which this application is submitted.

ALL APPLICANTS MUST COMPLETE THE FOLLOWING 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 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.

PRINTED NAME AND OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)

Bill Beck - Director of Public Works

SIGNATURE

TELEPHONE NUMBER WITH AREA CODE

660-827-3000

DATE SIGNED

10-19-12

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

For Design Flows Less than 1 Million Gallons Per Day,
Send Completed Form to:

Appropriate Regional Office

Map of regional offices with addresses and phone numbers is available on the Web at www.dnr.mo.gov/regions/ro-map.pdf.

For Design Flows of 1 Million Gallons Per Day or Greater,
Send Completed Form to:

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

END OF PART C.

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

Do not complete the remainder of this application, unless:

1. Your facility design flow is equal to or greater than 1,000,000 gallons per day.
2. Your facility is a pretreatment treatment works.
3. Your facility is a combined sewer system.

Submittal of an incomplete application may result in the application being returned. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.

FACILITY NAME Sedalia Southeast WWTP	PERMIT NO. MO- 0101567	OUTFALL NO. 001
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PART D – EXPANDED EFFLUENT TESTING DATA

40. EXPANDED EFFLUENT TESTING DATA

Refer to the supplemental application information to determine whether Part D applies to the treatment works.

40.1 EFFLUENT TESTING: IF THE TREATMENT WORKS HAS A DESIGN FLOW GREATER THAN OR EQUAL TO 1 MILLION GALLONS PER DAY OR IT HAS (OR IS REQUIRED TO HAVE) A PRETREATMENT PROGRAM, OR IS OTHERWISE REQUIRED BY THE PERMITTING AUTHORITY TO PROVIDE THE DATA, THEN PROVIDE EFFLUENT TESTING DATA FOR THE FOLLOWING POLLUTANTS. PROVIDE THE INDICATED EFFLUENT TESTING INFORMATION FOR EACH OUTFALL THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION ON COMBINED SEWER OVERFLOWS IN THIS SECTION. ALL INFORMATION REPORTED MUST BE BASED ON DATA COLLECTED THROUGH ANALYSIS CONDUCTED USING 40 CFR PART 136 METHODS. IN ADDITION, THIS DATA MUST COMPLY WITH QA/QC REQUIREMENTS OF 40 CFR PART 136 AND OTHER APPROPRIATE QA/QC REQUIREMENTS FOR STANDARD METHODS FOR ANALYTES NOT ADDRESSED BY 40 CFR PART 136. INDICATE IN THE BLANK ROWS PROVIDED BELOW ANY DATA YOU MAY HAVE ON POLLUTANTS NOT SPECIFICALLY LISTED IN THIS FORM. EFFLUENT TESTING MUST NOT BE MORE THAN FOUR AND ONE-HALF YEARS OLD.

OUTFALL NUMBER (Complete Once for Each Outfall Discharging Effluent to Waters of the State.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	CONC	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	NO. OF SAMPLES		
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS AND HARDNESS											
ANTIMONY	25	ug/L			25	ug/L			1	EPA 6020	50ug/L
ARSENIC	2.5	ug/L			2.5	ug/L			8	EPA 6020	5ug/L
BERYLLIUM	25	ug/L			25	ug/L			1	EPA 6020	50ug/L
CADMIUM	2.5	ug/L			0.58	ug/L			8	EPA 6020	0.3ug/L
CHROMIUM	5	ug/L			5	ug/L			57	EPA 6020	10ug/L
COPPER	30	ug/L			10.6	ug/L			63	EPA 6020	5ug/L
LEAD	2.5	ug/L			2.5	ug/L			57	EPA 6020	5ug/L
MERCURY	0.25	ug/L			0.25	ug/L			16	SM 3112 B	0.5ug/L
NICKEL	5	ug/L			5	ug/L			57	EPA 6020	10 ug/L
SELENIUM	2.5	ug/L			2.5	ug/L			1	EPA 6020	5ug/L
SILVER	50	ug/L			6.5	ug/L			62	EPA 6020	2ug/L
THALLIUM	50	ug/L			50	ug/L			1	EPA 6020	100ug/L
ZINC	106	ug/L			44.75	ug/L			62	EPA 6020	5ug/L
CYANIDE	5	ug/L			4.4	ug/L			11	SM4500-Cn	4ug/L
TOTAL PHENOLIC COMPOUNDS	2.5	ug/L			2.5	ug/L			1	EPA420.4-Q	5ug/L
HARDNESS (as CaCO ₃)	255	mg eq. C									

USE THIS SPACE (OR A SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER METALS REQUESTED BY THE PERMIT WRITER.

FACILITY NAME Sedalia Southeast WWTP	PERMIT NO. MO- 0101567	OUTFALL NO. 001
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PART D – EXPANDED EFFLUENT TESTING DATA (CONTINUED)

40.1 EXPANDED EFFLUENT TESTING DATA (CONTINUED)

Complete Once for Each Outfall Discharging Effluent to Waters of the State.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	CONC	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	NO. OF SAMPLES		
VOLATILE ORGANIC COMPOUNDS											
ACROLEIN	25	ug/L			25	ug/L			1	SW8260B	50ug/L
ACRYLONITRILE	25	ug/L			25	ug/L			1	SW8260B	50ug/L
BENZENE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
BROMOFORM	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
CARBON TETRACHLORIDE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
CHLOROBENZENE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
CHLORODIBROMO-METHANE											
CHLOROETHANE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
2-CHLORO-ETHYLVINYL ETHER	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
CHLOROFORM	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
DICHLOROBROMO-METHANE											
1,1-DICHLORO-ETHANE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
1,2-DICHLORO-ETHANE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
TRANS-1,2-DICHLOROETHYLENE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
1,1-DICHLORO-ETHYLENE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
1,2-DICHLORO-PROPANE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
1,3-DICHLORO-PROPYLENE											
ETHYLBENZENE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
METHYL BROMIDE											
METHYL CHLORIDE											
METHYLENE CHLORIDE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
1,1,2,2-TETRA-CHLOROETHANE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
TETRACHLORO-ETHANE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
TOLUENE	2.5	ug/L			2.5	ug/L			1	SW8260B	5.0ug/L
3,4-BENZO-FLUORANTHENE											
BENZO(GH) PHERYLENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
BENZO(K) FLUORANTHENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L

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PART D – EXPANDED EFFLUENT TESTING DATA (CONTINUED)

40.1 EXPANDED EFFLUENT TESTING DATA (CONTINUED)

Complete Once for Each Outfall Discharging Effluent to Waters of the State.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	CONC	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	NO. OF SAMPLES		
BIS (2-CHLOROTHOXY) METHANE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
BIS (2-CHLOROETHYL) – ETHER	5	ug/L			5	ug/L			1	SW8270C	10ug/L
BIS (2-ETHYLHEXYL) PHTHALATE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
4-BROMOPHENYL PHENYL ETHER	5	ug/L			5	ug/L			1	SW8270C	10ug/L
BUTYL BENZYL PHTHALATE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
2-CHLORONAPH-THALENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
4-CHLORPHENYL PHENYL ETHER	5	ug/L			5	ug/L			1	SW8270C	10ug/L
CHRYSENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
DI-N-BUTYL PHTHALATE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
DEBENZO (A,H) ANTHRACENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
1,2-DICHLORO-BENZENE	2.5	ug/L			2.5	ug/L			1	SW8260B	5ug/L
1,3-DICHLORO-BENZENE	2.5	ug/L			2.5	ug/L			1	SW8260B	5ug/L
1,4-DICHLORO-BENZENE	2.5	ug/L			2.5	ug/L			1	SW8260B	5ug/L
3,3-DICHLORO-BENZIDINE	10	ug/L			10	ug/L			1	SW8270C	20ug/L
DIETHYL PHTHALATE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
DIMETHYL PHTHALATE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
2,4-DINITRO-TOLUENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
2,6-DINITRO-TOLUENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
1,2-DIPHENYL-HYDRAZINE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
1,1,1-TRICHLORO-ETHANE	2.5	ug/L			2.5	ug/L			1	SW8260B	5ug/L
1,1,2-TRICHLORO-ETHANE	2.5	ug/L			2.5	ug/L			1	SW8260B	5ug/L
TRICHLORETHYLENE	2.5	ug/L			2.5	ug/L			1	SW8260B	5ug/L
VINYL CHLORIDE	2.5	ug/L			2.5	ug/L			1	SW8260B	5ug/L

USE THIS SPACE (OR A SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER VOLATILE ORGANIC COMPOUNDS REQUESTED BY THE PERMIT WRITER

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PART D – EXPANDED EFFLUENT TESTING DATA (CONTINUED)

40.1 EXPANDED EFFLUENT TESTING DATA (CONTINUED)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	CONC	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	NO. OF SAMPLES		
BASE-NEUTRAL COMPOUNDS											
ACENAPHTHENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
ACENAPHTHYLENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
ANTHRACENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
BENZIDINE	40	ug/L			40	ug/L			1	SW8270C	80ug/L
BENZO(A)ANTHRACENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
BENZO(A)PYRENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
FLUORANTHENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
FLUORENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
HEXACHLOROBENZENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
HEXACHLOROCYCLO-PENTADIENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
HEXACHLOROETHANE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
INDENO (1,2,3-CD) PYRENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
ISOPHORONE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
NAPHTHALENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
NITROBENZENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
N-NITROSODI-PROPYLAMINE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
N-NITROSODI-METHYLAMINE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
N-NITROSODI-PHENYLAMINE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
PHENANTHRENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
PYRENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L
1,2,4-TRICHLOROBENZENE	5	ug/L			5	ug/L			1	SW8270C	10ug/L

USE THIS SPACE (OR SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER BASE-NEUTRAL COMPOUNDS REQUESTED BY THE PERMIT WRITER.

END OF PART D

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.

FACILITY NAME Sedalia Southeast WWTP	PERMIT NO. MO- 0101567	OUTFALL NO. 001
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PART E – TOXICITY TESTING DATA

50. TOXICITY TESTING DATA

Refer to the Supplemental Application Information to determine whether Part E applies to the treatment works.

Publicly owned treatment works, or POTWS, meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points.

- A. POTWS with a design flow rate greater than or equal to 1 million gallons per day.
- B. POTWS with a pretreatment program (or those that are required to have one under 40 CFR Part 403).
- C. POTWS required by the permitting authority to submit data for these parameters
 - ◆ At a minimum, these results must include quarterly testing for a 12-month period within the past one year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute or chronic toxicity, depending on the range of receiving water dilution. Do not include information about combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
 - ◆ If EPA methods were not used, report the reason for using alternative methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E. If no biomonitoring data is required, do not complete Part E. Refer to the application overview for directions on which other sections of the form to complete.

50.1 REQUIRED TESTS. INDICATE THE NUMBER OF WHOLE EFFLUENT TOXICITY TESTS CONDUCTED IN THE PAST FOUR AND ONE-HALF YEARS.

CHRONIC	ACUTE 3
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INDIVIDUAL TEST DATA. Complete the following chart for the last three whole effluent toxicity tests. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

	MOST RECENT	2 ND MOST RECENT	3 RD MOST RECENT
A. TEST INFORMATION			
TEST NUMBER			
TEST SPECIES AND TEST METHOD NUMBER			
AGE AT INITIATION OF TEST			
OUTFALL NUMBER			
DATES SAMPLE COLLECTED			
DATE TEST STARTED			
DURATION			
B. GIVE TOXICITY TEST METHODS FOLLOWED			
MANUAL TITLE			
EDITION NUMBER AND YEAR OF PUBLICATION			
PAGE NUMBER(S)			
C. GIVE THE SAMPLE COLLECTION METHOD(S) USED. FOR MULTIPLE GRAB SAMPLES, INDICATE THE NUMBER OF GRAB SAMPLES USED.			
24-HOUR COMPOSITE			
GRAB			
D. INDICATE WHERE THE SAMPLE WAS TAKEN IN RELATION TO DISINFECTION. (CHECK ALL THAT APPLY FOR EACH)			
BEFORE DISINFECTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AFTER DISINFECTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AFTER DECHLORINATION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. DESCRIBE THE POINT IN THE TREATMENT PROCESS AT WHICH THE SAMPLE WAS COLLECTED			
SAMPLE WAS COLLECTED			
F. FOR EACH TEST, INCLUDE WHETHER THE TEST WAS INTENDED TO ASSESS CHRONIC TOXICITY, ACUTE TOXICITY OR BOTH.			
CHRONIC TOXICITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ACUTE TOXICITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G. PROVIDE THE TYPE OF TEST PERFORMED			
STATIC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
STATIC STATIC-RENEWAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FLOW-THROUGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H. SOURCE OF DILUTION WATER. IF LABORATORY WATER, SPECIFY TYPE; IF RECEIVING WATER, SPECIFY SOURCE			
LABORATORY WATER			
RECEIVING WATER			

FACILITY NAME Sedalia Southeast WWTP	PERMIT NO. MO- 0101567	OUTFALL NO. 001
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PART E - TOXICITY TESTING DATA (CONTINUED)

50.1 WHOLE EFFLUENT TOXICITY TESTS DATA (CONTINUED)

	MOST RECENT	2 ND MOST RECENT	3 RD MOST RECENT
I. TYPE OF DILUTION WATER, IF SALT WATER, SPECIFY "NATURAL" OR TYPE OF ARTIFICIAL SEA SALTS OR BRINE USED.			
FRESH WATER			
SALT WATER			
J. GIVE THE PERCENTAGE EFFLUENT USED FOR ALL CONCENTRATIONS IN THE TEST SERIES.			
K. PARAMETERS MEASURED DURING THE TEST. (STATE WHETHER PARAMETER MEETS TEST METHOD SPECIFICATIONS)			
pH			
SALINITY			
TEMPERATURE			
AMMONIA			
DISSOLVED OXYGEN			
L. TEST RESULTS			
ACUTE:			
PERCENT IN SURVIVAL IN 100% EFFLUENT			
LC ₅₀			
95% C.I.			
CONTROL PERCENT SURVIVAL			
OTHER (DESCRIBE)			
CHRONIC:			
NOEC			
IC ₂₅			
CONTROL PERCENT SURVIVAL			
OTHER (DESCRIBE)			
M. QUALITY CONTROL ASSURANCE			
IS REFERENCE TOXICANT DATA AVAILABLE?			
WAS REFERENCE TOXICANT TEST WITHIN ACCEPTABLE BOUNDS?			
WHAT DATE WAS REFERENCED TOXICANT TEST RUN (MM/DD/YYYY)?			
OTHER (DESCRIBE)			

50.2 TOXICITY REDUCTION EVALUATION

Is the treatment works involved in a toxicity reduction evaluation? Yes No
 If yes, describe:

50.3 SUMMARY OF SUBMITTED BIOMONITORING TEST INFORMATION

If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date Submitted (MM/DD/YYYY)

Summary of Results (See Instructions)

END OF PART E

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.			
FACILITY NAME Sedalia Southeast WWTP		PERMIT NO. MO- 0101567	OUTFALL NO. 001
PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
60. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
Refer to the Supplemental Application Information to determine whether Part F applies to the treatment works.			
All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete this form.			
GENERAL INFORMATION			
60.1 PRETREATMENT PROGRAM			
Does the treatment works have, or is it subject to, an approved pretreatment program?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
60.2 NUMBER OF NON-CATEGORICAL SIGNIFICANT INDUSTRIAL USERS, or SIUs AND CATEGORICAL INDUSTRIAL USERS, or CIUs. PROVIDE THE NUMBER OF EACH OF THE FOLLOWING TYPES OF INDUSTRIAL USERS THAT DISCHARGE TO THE TREATMENT WORKS.			
A. Number of Non-Categorical SIUs 1	B. Number of CIUs 0		
60.3 SIGNIFICANT INDUSTRIAL USER INFORMATION			
Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.			
NAME See attached			
MAILING ADDRESS		CITY	STATE ZIP
60.4 INDUSTRIAL PROCESSES			
DESCRIBE ALL OF THE INDUSTRIAL PROCESSES THAT AFFECT OR CONTRIBUTE TO THE SIU's DISCHARGE.			
60.5 PRINCIPAL PRODUCT(S) AND RAW MATERIAL (S)			
Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.			
PRINCIPAL PRODUCT(S)			
RAW MATERIAL(S)			
60.6 FLOW RATE			
A. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.			
gpd <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent			
B. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.			
C. gpd <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent			
60.7 PRETREATMENT STANDARDS			
Indicate whether the SIU is subject to the following			
A. Local Limits	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
B. Categorical Pretreatment Standards	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
If subject to categorical pretreatment standards, which category and subcategory?			
60.8 PROBLEMS AT THE TREATMENT WORKS ATTRIBUTED TO WASTE DISCHARGED BY THE SIU			
Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, describe each episode			
See attached			

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.

FACILITY NAME Sedalia Southeast WWTP	PERMIT NO. MO- 0101567	OUTFALL NO. 001
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PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES (CONTINUED)

60.9 RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE

RCRA WASTE. Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail or dedicated pipe?
 Yes No

WASTE TRANSPORT. Method by which RCRA waste is received. (Check all that apply)
 Truck Rail Dedicated Pipe

WASTE DESCRIPTION. Give EPA hazardous waste number and amount (volume or mass, specify units).

EPA HAZARDOUS WASTE NUMBER	AMOUNT	UNITS

60.10 CERCLA, OR SUPERFUND, WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER AND OTHER REMEDIAL ACTIVITY WASTEWATER

REMEDIAL WASTE. Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?
 Yes No Provide a list of sites and the requested information for each current and future site.

60.11 WASTE ORIGIN

Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).

60.12 POLLUTANTS

List the hazardous constituents that are received (or are expected to be received). Included data on volume and concentration, if known. (Attach additional sheets if necessary)

60.13 WASTE TREATMENT

A. Is this waste treated (or will it be treated) prior to entering the treatment works?
 Yes No

If Yes, describe the treatment (provide information about the removal efficiency):

B. Is the discharge (or will the discharge be) continuous or intermittent?
 Continuous Intermittent

If intermittent, describe the discharge schedule:

END OF PART F

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.		
FACILITY NAME Sedalia Southeast WWTP	PERMIT NO. MO- 0101567	OUTFALL NO. 001
PART G – COMBINED SEWER SYSTEMS		
70. COMBINED SEWER SYSTEMS (COMPLETE THIS PART IF THE TREATMENT WORKS HAS A COMBINED SEWER SYSTEM.)		
Refer to the Supplemental Application Information to determine whether Part G applies to the treatment works.		
70.1 SYSTEM MAP		
Provide a map indicating the following: (May be included with basic application information.)		
A. All CSO Discharges. B. Sensitive Use Areas Potentially Affected by CSOs. (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems and Outstanding Natural Resource Waters.) C. Waters that Support Threatened and Endangered Species Potentially Affected by CSOs.		
70.2 SYSTEM DIAGRAM		
Provide a diagram, either in the map provided above or on a separate drawing, of the Combined Sewer Collection System that includes the following information:		
A. Locations of Major Sewer Trunk Lines, Both Combined and Separate Sanitary. B. Locations of Points where Separate Sanitary Sewers Feed into the Combined Sewer System. C. Locations of In-Line or Off-Line Storage Structures. D. Locations of Flow-Regulating Devices. E. Locations of Pump Stations.		
70.3 PERCENT OF COLLECTION SYSTEM THAT IS COMBINED SEWER		
70.4 POPULATION SERVED BY COMBINED SEWER COLLECTION SYSTEM		
70.5 NAME OF ANY SATELLITE COMMUNITY WITH COMBINED SEWER COLLECTION SYSTEM		
70.6 CSO OUTFALLS. COMPLETE THE FOLLOWING ONCE FOR EACH CSO DISCHARGE POINT		
70.7 DESCRIPTION OF OUTFALL		
A. Outfall Number		
B. Location		
C. Distance from Shore (if applicable) _____ ft		D. Depth Below Surface (if applicable) _____ ft
E. Which of the following were monitored during the last year for this CSO? <input type="checkbox"/> Rainfall <input type="checkbox"/> CSO Pollutant Concentrations <input type="checkbox"/> CSO <input type="checkbox"/> CSO Flow Volume <input type="checkbox"/> Receiving Water Quality		
F. How many storm events were monitored last year?		
70.8 CSO EVENTS		
A. Give the Number of CSO Events in the Last Year _____ Events <input type="checkbox"/> Actual <input type="checkbox"/> Approximate		B. Give the Average Duration Per CSO Event _____ Hours <input type="checkbox"/> Actual <input type="checkbox"/> Approximate
C. Give the Average Volume Per CSO Event _____ Million Gallons <input type="checkbox"/> Actual <input type="checkbox"/> Approximate		D. GIVE THE MINIMUM RAINFALL THAT CAUSED A CSO EVENT IN THE LAST YEAR _____ INCHES OF RAINFALL
70.9 DESCRIPTION OF RECEIVING WATERS		
A. Name of Receiving Water		
B. Name of Watershed/River/Stream System		U.S. Soil Conservation Service 14-Digit Watershed Code (If Known)
Name of State Management/River Basin		U.S. Geological Survey 8- Digit Hydrologic Cataloging Unit Code (If Known)
70.10 CSO OPERATIONS		
Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shellfish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable state water quality standard.)		
END OF PART G.		
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.		

INSTRUCTIONS FOR COMPLETING FORM B2
APPLICATION FOR CONSTRUCTION OR OPERATING PERMITS FOR FACILITIES WHICH RECEIVE
BASICALLY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY
(Facilities less than or equal to 100,000 gallons per day of domestic waste must use FORM B.)
(Facilities that receive wastes other than domestic must fill out FORM A and other forms as appropriate.)

PART A – BASIC APPLICATION INFORMATION

1. Check which parameter is applicable. **Do not check more than one item.** Construction and operating permit refer to permits issued by the Department of Natural Resources, Water Protection Program, Water Pollution Branch.

Effective Sept. 1, 2008, a facility will be required to use **MISSOURI'S ANTIDegradation Rule and Implementation Procedure**. For more information, this document is available at www.dnr.mo.gov/env/wpp/docs/aip-cwc-appr-050708.pdf. This procedure will be applicable to new and expanded wastewater facilities and requires the proposed discharge to a water body to undergo a level of Antidegradation Review that documents the use of a water body's available assimilative capacity is justified.

- 1.1 Self – explanatory.
- 1.2 An operating permit and antidegradation review public notice requires a Water Quality/Antidegradation Review Sheet to be submitted with the application (No fee required).

CONSTRUCTION PERMIT FEES (Include fee with application.)

\$750 for a sewage treatment facility with a design flow of less than 500,000 gallons per day.

\$2,200 for sewage treatment facility with a design flow of 500,000 gallons per day or more.

DOMESTIC OPERATING PERMIT FEES (Annual operating permit fees are based on flow.)

Annual fee/Design flow

Annual fee/Design flow

\$3,000.....30,000 gpd to1 mgd

\$3,500.....>1 million gallons per day

New domestic wastewater treatment facilities must submit the annual fee with the original application.

If the application is for a site-specific permit re-issuance, send no fees. You will be invoiced separately by the department on the anniversary date of the original permit. Permit fees must be current for the department to reissue the operating permit. Late fees of two percent per month are charged and added to outstanding annual fees.

PUBLIC SEWER SYSTEM OPERATING PERMIT FEES (City, Public Sewer District, Public Water District, or other publicly owned treatment works). Annual fee is based on number of service connections. The table of fees is in 10 CSR 20-6.011 and is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf. New Public Sewer System facilities should not submit any fee as the department will invoice the permittee.

OPERATING PERMIT MODIFICATIONS, including transfers, are subject to the following fees:

- a. Municipals - \$200 each.
- b. All others – 25 percent of annual fee.

Note: Facility name or address changes where owner, operator and continuing authority remain the same are not considered transfers.

2. Name of Facility – Include the name by which this facility is locally known. Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Provide the street address or location of the facility. If the facility lacks a street name or route number, provide the names of the closest intersection, highway, country road, etc.
 - 2.1 Self – explanatory.
 - 2.2 Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.
3. Owner – Provide the legal name and address of the owner.
 - 3.1 Prior to submitting a permit to public notice, the Department of Natural Resources shall provide the permit applicant 10 days to review the draft permit for nonsubstantive drafting errors. In the interest of expediting permit issuance, permit applicants may waive the opportunity to review draft permits prior to public notice. Check Yes to review the draft permit prior to public notice. Check No to waive the process and expedite the permit.
4. Continuing Authority – Provide the permanent organization, which will serve as the continuing authority for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf or contact the appropriate Department of Natural Resources Regional Office.
5. Operator – Provide the name, certificate number and telephone number of the operator of the facility.
6. Provide the name, title and work telephone number of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department, if necessary.
 - 7.1 Provide a brief description of the wastewater treatment facilities.
 - 7.2 A topographic map is available on the Web at www.dnr.mo.gov/internetmapviewer/ or from the Department of Natural Resources' Division of Geology and Land Survey in Rolla, Missouri at 573-368-2125.
 - 7.3 Self – explanatory.
 - 7.4 For Standard Industrial Codes, visit www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System, visit www.census.gov/naics or contact the appropriate Department of Natural Resources Regional Office.
 - 7.5 – 8.1 Self – explanatory.
 - 9.1 A copy of 10 CSR 25 is available at www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp#10-25.
 - 9.2 – 9.9 Self – explanatory.

INSTRUCTIONS FOR COMPLETING FORM B2
APPLICATION FOR CONSTRUCTION OR OPERATING PERMITS FOR FACILITIES WHICH RECEIVE
BASICALLY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY
(Continued)

- 9.10 Refer to University of Missouri Extension Environmental Quality publications about biosolids - numbers WQ420-426. Available on the Web at <http://extension.missouri.edu/explore/envqual/>. Additionally, the federal sludge regulations are available through the U.S. Government Printing Office at www.gpoaccess.gov/cfr/index.html.
10. Provide the name and address of the first downstream landowner, different from that of the permitted facility, through whose property the discharge will flow. For discharges that leave the permitted facility and flow under a road or highway, or along the right-of-way, the downstream property owner is the landowner that the discharge flows to after leaving the right-of-way.
11. – 11.3 Self – explanatory.

PART B – ADDITIONAL APPLICATION INFORMATION

20. – 20.3 Self – explanatory.
- 20.4 Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used at the outfall pipe and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.
- 20.5 – 20.7 Self – explanatory.

PART C – CERTIFICATION

30. Signature – 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.

PART D – EXPANDED EFFLUENT TESTING DATA

- 40.1 Self – explanatory. ML/MDL means minimum limit or minimum detection limit.

PART E – TOXICITY TESTING DATA

- 50.1 – 50.3 Self – explanatory.

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

60. Federal regulations are available through the U.S. Government Printing Office at www.gpoaccess.gov/cfr/index.html.
- 60.1 Self – explanatory
- 60.2 A non-categorical significant industrial user is an industrial user that is not a CIU and meets one or more of the following:
- i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
 - ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
 - iii. Is designated as an SIU by the control authority.
- 60.3 – 60.13 Self – explanatory.

PART G – COMBINED SEWER SYSTEMS

70. – 70.10 Self – explanatory.

This completed form, along with the applicable permit fees, should be submitted to the appropriate Department of Natural Resources Office (See end of Part C). Submittal of an incomplete application may result in the application being returned. Map of regional offices with addresses and phone numbers are available on the Web at www.dnr.mo.gov/regions/ro-map.pdf. If there are any questions concerning this form, please contact the appropriate Regional Office or the Department of Natural Resources, Water Protection Program, Water Pollution Branch, NPDES Permits and Engineering Section at 573-751-6825.

Part A

Question 7.2 - See the following attachments hereto:

- Exhibit 1: Southeast WWTP Location (USGS base).
- Exhibit 2: Downstream Property Owners.
- Plan Sheet C11: Southeast WWTP Site Plan.

Question 7.3 - See Attachment, Plan Sheet G6: Southeast WWTP Process Schematic.

Question 7.7 - The Southeast Plant currently experiences approximately 18 by-passes each year.

Question 7.14 - Permit Violations at the Central Plant in the Past 5 years (2007 - 2012)

- November 2009 - % BOD reduction
- January 2010 - % BOD/TSS reduction
- October 2010 - % BOD/TSS reduction
- October 2010 - Ag (monthly average)
- February 2011 - % BOD reduction
- March 2011 - % BOD reduction
- April 2011 - Cu (monthly average)
- August 2011 - Cu (monthly average)
- September 2011- Cu (monthly average)
- October 2011 - Ag and Cu (monthly average)
- November 2011 - Ag and Cu (daily max and monthly average)
- December 2011 - Ag and Cu (monthly average)
- December 2011 - Ag and Cu (monthly average)
- March 2012 - Cu (monthly average)
- May 2012 - Cu (monthly average)
- June 2012 - Cu (monthly average)
- July 2012 - Cu (monthly average)
- August 2012 - Cu (monthly average)

Part B

Question 20 -Inflow and Infiltration: The City of Sedalia is currently addressing SSO's, basement backups and treatment plant bypasses under MDNR Administrative Order of Consent (AOC) No. 1002. The City has begun and will continue efforts to identify and reduce inflow and infiltration (I&I) in the collection system as cited in the AOC and further developed in the "Inflow & Infiltration Plan," July 2010 and Supplement, September 2010, Olsson Associates. In terms of influent flow to WWTP's, the target or action level is 2.5 times the average dry weather flow.

Question 20.2 - Proposed improvements are required by the current NPDES permit to achieve Final Effluent Limitations by April 2, 2013.

Additional Facility Information for Southeast Plant Permit # MO - 0101567

Question 20.7 - Effluent Testing Data: Monitoring and reporting of effluent is performed and submitted to MDNR as required by the NPDES permit and includes monthly, quarterly and annual monitoring reports. The current NPDES permit is attached for reference. Additional copies of monitoring reports not included, but can be made available upon request.

PART D

Question 40.1- See Attachment, Expanded Effluent Test Report.

PART E

Question 50.1—Toxicity Testing Data: Similar to Question 20.7. Reports of Acute Toxicity Testing for 2009, 2010, 2011, 2012 attached for reference.

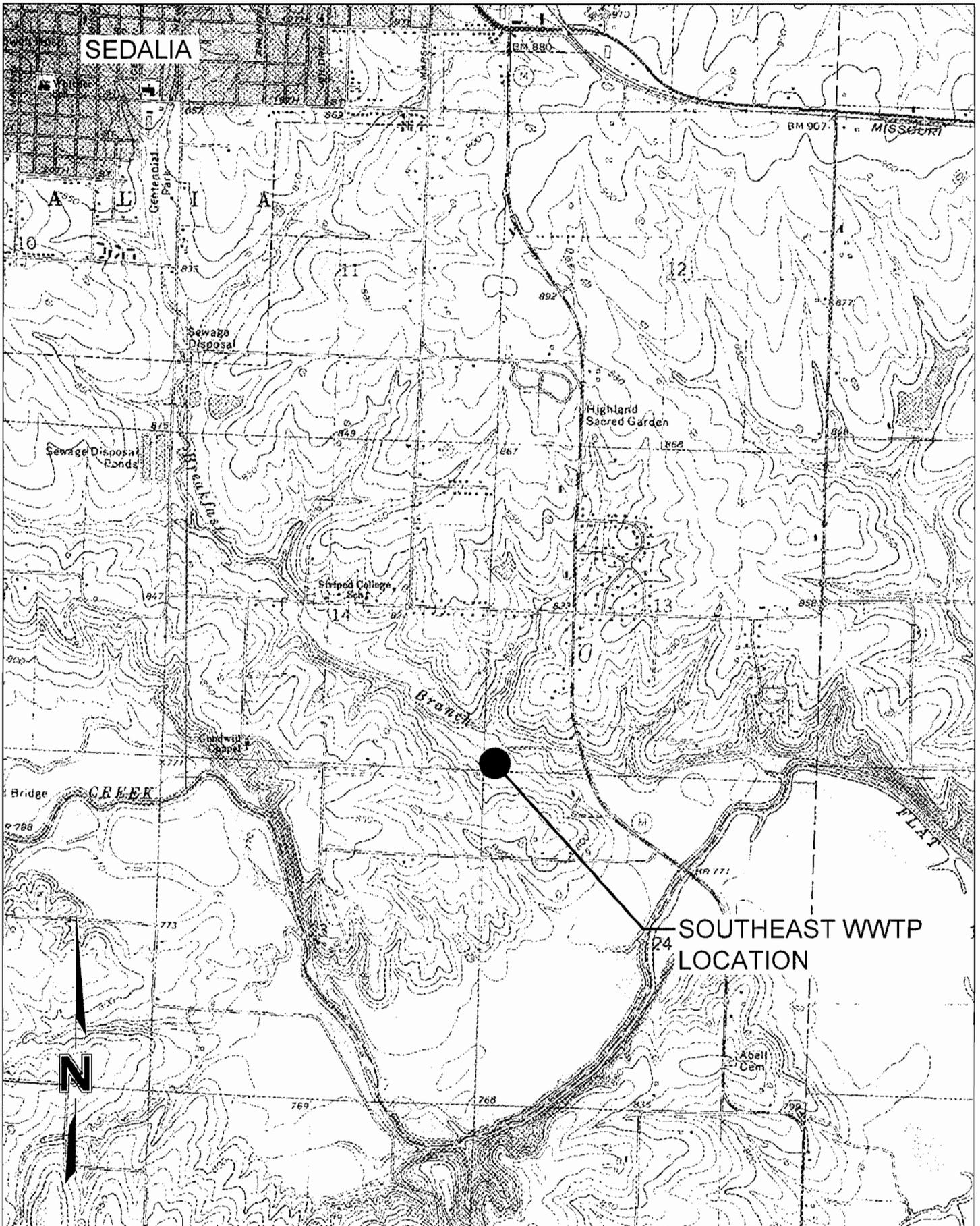
PART F

Question 60.3 thru 60.6 – Significant Industrial Users: Inter-state Studio & Publishing Company discharges to the Southeast Plant. See attached “Industrial User Inspection Checklist” for information.

Question 60.8 — SIU Problems: See attached incident report.

PART G—NOT APPLICABLE.

PART A
ATTACHMENTS



SCALE: 1" = 2000'
 PROJECT NO: 009-0827
 DATE: 4/13/2012

**SOUTHEAST WWTW LOCATION
 SEDALIA, MISSOURI**

MOLSSON
 ASSOCIATES

1251 NW Briarcliff Parkway
 Suite 50
 Kansas City, MO 64116
 TEL 816.361.1177
 FAX 816.361.1888

EXHIBIT
1

**ENGINEERING SURVEYS AND SERVICES
TESTING LABORATORIES**

1113 Fay Street * Columbia, Missouri 65201 * (573) 449-2646
862 El Dorado Drive * Jefferson City, Missouri 65101 * (573) 636-3303
1775 West Main Street * Sedalia, Missouri 65301 * (660) 826-8618

Date: 12 October 2012

Lab Number: L2486

Project: City of Sedalia Southeast WWTP

Location: Sedalia, Missouri

Date Received: 20 September 2012

Sample No: / 7239 / Southeast Plant Effluent, Composite, 18 Sep 12

Description:

TEST RESULTS:

Parameter:	7239	Units	Detection	Method
Antimony	<50	ug/l		6020
Arsenic	<5	ug/l		6020
Beryllium	<50	ug/l		6020
Cadmium	<0.3	ug/l		6020
Chromium	<10	ug/l		6020
Copper	26	ug/l		6020
Lead	<5	ug/l		6020
Mercury	<0.5	ug/l		3112 B
Nickel	<10	ug/l		6020
Selenium	<5	ug/l		6020
Silver	<2	ug/l		6020
Thallium	<100	ug/l		6020
Zinc	62	ug/l		6020
Digestion	Yes			

Sample secured and delivered to laboratory by others

Results are Total Recoverable

Method number from "Standard Methods for the Examination of Water & Wastewater", current edition, unless noted otherwise.

cc: John Harris
email Harris
1 Dennis Vinson
1

Engineering Surveys & Services

BY:


Linda L. Adams

**ENGINEERING SURVEYS AND SERVICES
TESTING LABORATORIES**

1113 Fay Street * Columbia, Missouri 65201 * (573) 449-2646
802 El Dorado Drive * Jefferson City, Missouri 65101 * (573) 636-3303
1775 West Main Street * Sedalia, Missouri 65301 * (660) 826-8618

Date: 12 October 2012

Lab Number: L2486

Project: City of Sedalia Southeast WWTP

Location: Sedalia, Missouri

Date Received: 20 September 2012

Sample No: / 7239 / Southeast Plant Effluent, Composite, 18 Sep 12

Description: 7240 / Southeast Plant Effluent, Grab, 20 Sep 12

TEST RESULTS:

Parameter:	7239	7240	Units	Method
Calcium	60.8	xxxx	mg/l	6020
Magnesium	25.1	xxxx	mg/l	6020
Total Hardness	255	xxxx	mg eq. CaCo3/l	2340 B
Phenols	<0.005*	xxxx	mg/l	5530 B, D
Semivolatile Organics	**	xxxx		
Volatile Organic Compound	xxxx	**		EPA 8260
Cyanide	xxxx	<4	mg/l	4500-CnE

Sample secured and delivered to laboratory by others
Analysis by PDC Laboratories

** See attached report

Method number from "Standard Methods for the Examination of Water & Wastewater", current edition, unless noted otherwise.

cc: John Harris
email Harris
1 Dennis Vinson
1

Engineering Surveys & Services

BY:



Linda L. Adams



PDC Laboratories, Inc.
 P.O. Box 9071 • Moline, IL 61201-9071
 TEL: 309-246-9698 • FAX: 309-246-9699



Engineering Surveys & Services-Columbia
 1113 Fay Street
 Columbia, MO 65201
 Attn: Acct Payable

Date Received: 09/21/12 9:15
 Report Date: 10/11/12
 Customer #: 275332

Laboratory Results

Sample No: 2093087-01

Collect Date: 09/19/12 00:00

Matrix: Waste Water

Sample Description: EFFLUENT COMPOSITE

Parameters	Result	Qual	Prep Date	Analysis Date	Analyst	Method
General Chemistry - PIA						
Phenolics	< 0.0050 mg/L		09/24/12 08:41	09/25/12 12:56	Igbrs	EPA 420.4 - QC 10-210-00-1A
Semivolatile Organics - PIA						
1,2,4-Trichlorobenzene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
1,2-Diphenylhydrazine	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
2,4,6-Trichlorophenol	< 50 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
2,4-Dichlorophenol	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
2,4-Dimethylphenol	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
2,4-Dinitrophenol	< 50 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
2,4-Dinitrotoluene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
2,6-Dinitrotoluene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
2-Chloronaphthalene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
2-Chlorophenol	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
2-Nitrophenol	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
3,3'-Dichlorobenzidine	< 20 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
4,6-Dinitro-2-methylphenol	< 50 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
4-Bromophenylphenyl ether	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
4-Chloro-3-methylphenol	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
4-Chlorophenylphenyl ether	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
4-Nitrophenol	< 50 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Acenaphthene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Acenaphthylene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Anthracene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Benzidine	< 80 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Benzo(a)anthracene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Benzo(a)pyrene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Benzo(b)fluoranthene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Benzo(g,h,i)perylene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Benzo(k)fluoranthene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Bis(2-chloroethoxy) methane	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Bis(2-chloroethyl) ether	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C

2093087



PDC Laboratories, Inc.
 PO Box 300 • Columbia, MO 65201
 TEL: 661-6899 • FAX: 661-6899



Engineering Surveys & Services-Columbia
 1113 Fay Street
 Columbia, MO 65201
 Attn: Acct Payable

Date Received: 09/21/12 9:15
 Report Date: 10/11/12
 Customer #: 275332

Laboratory Results

Sample No: 2093087-01

Collect Date: 09/19/12 00:00
 Matrix: Waste Water

Sample Description: EFFLUENT COMPOSITE

Parameters	Result	Qual	Prep Date	Analysis Date	Analyst	Method
Semivolatile Organics - PIA						
Bis(2-ethylhexyl) phthalate	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Butyl benzyl phthalate	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Chrysene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Dibenzo(a,h)anthracene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Diethyl phthalate	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Dimethyl phthalate	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Di-n-butyl phthalate	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Fluoranthene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Fluorene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Hexachlorobenzene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Hexachlorocyclopentadiene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Hexachloroethane	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Indeno(1,2,3-cd)pyrene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Isophorone	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Naphthalene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Nitrobenzene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
N-Nitrosodimethylamine	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
N-Nitrosodi-n-propylamine	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
N-Nitrosodiphenylamine	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Pentachlorophenol	< 50 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Phenanthrene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Phenol	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C
Pyrene	< 10 ug/L		09/24/12 08:10	09/26/12 17:40	CAH	SW 8270C

Sample No: 2093087-02

Collect Date: 09/20/12 00:00
 Matrix: Waste Water Grab

Sample Description: EFFLUENT GRAB

Parameters	Result	Qual	Prep Date	Analysis Date	Analyst	Method
Volatile Organics - PIA						

2093087



PDC Laboratories, Inc.
 1113 Fay Street • Columbia, MO 65201
 573-751-1234 • Fax: 573-751-1235



Engineering Surveys & Services-Columbia
 1113 Fay Street
 Columbia, MO 65201
 Attn: Acct Payable

Date Received: 09/21/12 9:15
 Report Date: 10/11/12
 Customer #: 275332

Laboratory Results

Sample No: 2093087-02

Collect Date: 09/20/12 00:00

Matrix: Waste Water Grab

Sample Description: EFFLUENT GRAB

Parameters	Result	Qual	Prep Date	Analysis Date	Analyst	Method
Volatile Organics - PIA						
1,1,1,2-Tetrachloroethane	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
1,1,1-Trichloroethane	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
1,1,2,2-Tetrachloroethane	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
1,1,2-Trichloroethane	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
1,1-Dichloroethane	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
1,1-Dichloroethene	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
1,2-Dichlorobenzene	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
1,2-Dichloroethane	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
1,2-Dichloropropane	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
1,3-Dichlorobenzene	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
1,3-Dichloropropene- Total	< 15 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
1,4-Dichlorobenzene	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
2-Chloroethylvinyl ether	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Acrolein	< 50 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Acrylonitrile	< 50 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Benzene	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Bromodichloromethane	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Bromoform	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Bromomethane	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Carbon tetrachloride	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Chlorobenzene	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Chloroethane	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Chloroform	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Chloromethane	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Dibromochloromethane	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Ethylbenzene	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Methylene chloride	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Tetrachloroethene	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Toluene	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
trans-1,2-Dichloroethene	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B
Trichloroethene	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B

2093087



PDC Laboratories, Inc.

1000 Boylston Ave. • Kansas City, MO 64101
314-833-4488 • 800-777-7773 • FAX 314-833-4484



Engineering Surveys & Services-Columbia
1113 Fay Street
Columbia, MO 65201
Attn: Acct Payable

Date Received: 09/21/12 9:15
Report Date: 10/11/12
Customer #: 275332

Laboratory Results

Sample No: 2093087-02

Collect Date: 09/20/12 00:00

Matrix: Waste Water Grab

Sample Description: EFFLUENT GRAB

Parameters	Result	Qual	Prep Date	Analysis Date	Analyst	Method
<u>Volatile Organics - PIA</u>						
Vinyl chloride	< 5.0 ug/L		09/25/12 00:00	09/25/12 17:16	JJI	SW 8260B

2093087

SAMPLE CHAIN OF CUSTODY RECORD

ENGINEERING SURVEYS & SERVICES

1113 Fay Street * Columbia, Missouri 65201 * (573) 449-2646
 802 El Dorado Drive * Jefferson City, Missouri 65101 * (573) 636-3303
 1175 W. Main Street * Sedalia, Missouri 65301 * (660) 826-8618

Sample ID	Date/Time Collected	Tests Requested	Sample Container	Preserv.	Comments
Future metal tests		per email	1000g 1000g 2-1000cc	HNO ₃ NaOH NP	
			500cc 2-vials	H ₂ SO ₄ H ₂ SO ₄	
		Composite - 7239			
		Grab 7240			

Sample Collected By Dennis Vinsoc Company/Organization City of Sedalia
 Date/Time 9-20-12 2:30 AM Address 2900 West Main Sedalia, MO

Samples Relinquished By/Phone	Samples Received By	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	9-20-12 8:30am
<i>[Signature]</i>	<i>[Signature]</i>	9-20-12 10:40AM
<i>[Signature]</i>	<i>[Signature]</i>	20.5.12 12:20pm

Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1030422
June 10, 2009 through June 12, 2009

Tests performed by:

John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

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Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567

EAS LOG# 1030422

June 10, 2009 through June 12, 2009

1. REPORT SUMMATION:

1.1. Single Dilution Data Summation

	<i>Pimephales promelas</i> Acute Toxicity Test	<i>Ceriodaphnia dubia</i> Acute Toxicity Test
Survival in the Effluent at 48 Hours	100%	100%
Survival in the Reconstituted Control (RC) at 48 Hours	100%	100%
Survival in the Upstream Control (UC) at 48 Hours	N/A	N/A
Statistical Results Comparing the Survival Data of the Effluent with the Control (arc sine square root transformation)	No Significant Difference at alpha = 0.05 PASS	No Significant Difference at alpha = 0.05 PASS

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

Conclusion: The mortality observed with both species was determined not to be significantly different than that observed in the control sample.

Based on these results the outfall passed the whole effluent toxicity test with both indicator species.

Approved by _____

Sara C. Shields, Chemist

Environmental Analysis South, Inc.

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1030422
June 10, 2009 through June 12, 2009

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

	<i>Ceriodaphnia dubia:</i>	<i>Pimephales promelas:</i>
Test duration:	48 hours	48 hours
Temperature:	24 - 26 degree Celsius	24 - 26 degree Celsius
Light quality:	Ambient laboratory illumination	Ambient laboratory illumination
Photoperiod:	16 hour light, 8 hours dark	16 hour light, 8 hours dark
Control Water:	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
Dilution Water:	Upstream Water - if unavailable or toxic, then control water will be used.	Upstream Water - if unavailable or toxic, then control water will be used.
Size of test vessel:	30 milliliters	250 milliliters
Volume of test solution:	15 milliliters	200 milliliters
Age of test organisms:	<24 hours	1 -14 days (all same age)
Number of organisms/test vessel:	5	10
Number of replicates/concentration:	4	4
Number of organisms/concentration:	20	40 for a single dilution test and 20 for a multiple dilution test
Feeding regime:	None (fed prior to test)	None (fed prior to test)
Aeration:	None	None
Test acceptability criterion:	90% or greater survival in controls	90% or greater survival in controls

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from ARO (Aquatic Research Organisms) located in Hampton, New Hampshire and shipped overnight for use in the whole effluent toxicity test.

Environmental Analysis South, Inc.

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1030422
June 10, 2009 through June 12, 2009

2.2. REFERENCE TOXICITY TEST:

Environmental Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on June 3, 2009 using KCL Lot #41713. Following are the results:

- 2.2.1. *P. promelas* - 48 hr. Acute Test -- $LC_{50} = 0.988$ g/l 95%CI (0.727 – 1.248 g/l)
EAS %CV = 13.2%
National Warning Limits (75th percentile) = 19%CV
National Control Limits (90th percentile) = 33%CV
- 2.2.2. *C. dubia* - 48 hr. Acute Test -- $LC_{50} = 0.410$ g/l 95%CI (0.205 – 0.614 g/l)
EAS %CV = 25.0%
National Warning Limits (75th percentile) = 29%CV
National Control Limits (90th percentile) = 34%CV

2.3. LITERATURE CITED:

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 5th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2)*. June 2000. EPA 833-R-00-003.

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite EAS LOG# 1030422

Analyst 1: DFW
Analyst 2: KJR
Analyst 3: SCS

Date Test Began: June 10, 2009 Time Test Began: 1130 hrs

Date Test Finished: June 12, 2009 Time Test Finished: 1130 hrs

P. promelas (PP) AGE: 9 days HATCH NUMBER: 052609th ato

PERIOD	RC	UC	100%	50%	25%	12.50%	6.25%	X% AEC
0 HR-PP	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
	10,10,10,10		10,10,10,10					
24 HR-PP	ALIVE							
	10,10,10,10		10,10,10,10					
48 HR-PP	ALIVE							
	10,10,10,10		10,10,10,10					

Centrodaphnia dubia (CD) AGE: <24 hours HATCH NUMBER: 060909cd ato

PERIOD	RC	UC	100%	50%	25%	12.50%	6.25%	X% AEC
0 HR-CD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
	5,5,5,5		5,5,5,5					
24 HR-CD	ALIVE							
	5,5,5,5		5,5,5,5					
48 HR-CD	ALIVE							
	5,5,5,5		5,5,5,5					

Approved by: *[Signature]*

Date: 06/10/2009

Single
100%

ENVIRONMENTAL ANALYSIS SOUTH, INC.
4000 East Jackson Blvd
Jackson, MO 63755
Phone: (573) 204-8817 Fax: (573) 204-8818



WHOLE EFFLUENT TOXICITY TESTING CHAIN OF CUSTODY

CLIENT: City of Sedalia

NPDES PERMIT NUMBER: MO-0101567
Sedalia Southeast Wastewater

EFFLUENT NAME: Treatment Plant GRAB 24 HR COMPOSITE
(LEGAL NAME)

COLLECTION DATA: START DATE: 8 June 09 START TIME: 7:30 AM

FINISH DATE: 9 June 09 FINISH TIME: 7:30 AM

UPSTREAM NAME: Breakfast Branch (GRAB SAMPLE)
(LEGAL NAME)

COLLECTION DATA: DATE: _____ TIME: _____

SAMPLER NAME: _____ CARRIER: _____
(PRINT NAME)

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:
• Sampling & holding time errors (Will results in a setup charge of \$100 to the client)
• Commercial carrier delivery problems or errors (Will results in a setup charge of \$100 to the client)
• Problems with health or delivery of test organisms by vendor (No setup charge to client)

SAMPLER CHECK LIST

NO HEADSPACE IN BOTTLES
~~DELIVERED BY NEXT DAY CARRIER OR DELIVER TO LAB ON 6/10/09~~
SAMPLES TO BE HAND DELIVERED TO LABORATORY SAME DAY AS TEST SETUP
SUFFICIENT ICE TO COOL SAMPLES TO A RANGE OF 0 - 6° C WHEN SHIPPING OVERNIGHT

RELINQUISHED BY: Rachel Blahly DATE: 9 JUNE 09 TIME: 8:00 AM

LABORATORY USE ONLY

EFFLUENT LOG NUMBER: 1030422

RECEIVED TEMPERATURE: 4 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

UPSTREAM LOG NUMBER: _____

RECEIVED TEMPERATURE: _____ °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

DATE: 6/10/09 TIME: 9:30 AM



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM - P.O. BOX 176, JEFFERSON CITY MO, 65102
WHOLE EFFLUENT TOXICITY (WET) TEST REPORT
 (TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

PART A - TO BE COMPLETED IN FULL BY PERMITTEE

FACILITY NAME Sedalia Southeast Wastewater Treatment Plant	DATE & TIME COLLECTED EFFLUENT 06/08/09 0730 - 06/09/09 0730 UPSTREAM <u>not collected</u>
PERMIT NUMBER MO-0101567	PERMIT OUTFALL NUMBER Outfall # 001
COLLECTOR'S NAME information not submitted to the lab	
RECEIVING STREAM COLLECTION SITE AND DESCRIPTION Breakfast Branch-not submitted	
PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC) 100%	EFFLUENT SAMPLE TYPE (CHECK ONE) <input checked="" type="checkbox"/> 24HR COMPOSITE <input type="checkbox"/> GRAB <input type="checkbox"/> OTHER _____
SAMPLE NUMBER EFFLUENT 1030422 UPSTREAM <u>none submitted</u>	UPSTREAM SAMPLE TYPE (CHECK ONE) <input type="checkbox"/> 24HR COMPOSITE <input type="checkbox"/> GRAB <input checked="" type="checkbox"/> OTHER <u>no upstream</u>
PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR CHLORINE _____ mg/L	PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR AMMONIA _____ mg/L

PART B - TO BE COMPLETED IN FULL BY PERFORMING LABORATORY

PERFORMING LABORATORY Environmental Analysis South, Inc.	TEST TYPE Acute Static Non renewal Test Single Dilution	
FINAL REPORT NUMBER MO_1030422	TEST DURATION 48 hour	
DATE OF LAST REFERENCE TOXICANT TESTING June 3, 2009	TEST METHOD Methods for Measuring the Acute Toxicity of Effluents and Receiving Wetlands to Freshwater and Marine Organisms	
DATE AND TIME SAMPLES RECEIVED AT LABORATORY 06/10/09 0930 hrs by UPS	TEST START DATE AND TIME 06/10/09 1130 hrs	TEST END DATE AND TIME 06/12/09 1130 hrs
SAMPLE DECHLORINATED PRIOR TO ANALYSIS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____	TEST ORGANISM #1 AND AGE Pimephales promelas 9 days	TEST ORGANISM #2 AND AGE Ceriodaphnia dubia < 24 hours
SAMPLE FILTERED ¹ PRIOR TO ANALYSIS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____	90% OR GREATER SURVIVAL IN SYNTHETIC CONTROL? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	DILUTION WATER USED TO ACHIEVE AEC none
FILTER MESH SIEVE SIZE ² None	EFFLUENT ORGANISM #1 % MORTALITY AT AEC 0%	EFFLUENT ORGANISM #2 % MORTALITY AT AEC 0%
SAMPLE AERATED DURING TESTING? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	UPSTREAM ORGANISM #1 % MORTALITY RC=0%	UPSTREAM ORGANISM #2 % MORTALITY RC=0%
pH ADJUSTED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____	TEST RESULT AT AEC FOR ORGANISM #1 <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL	TEST RESULT AT AEC FOR ORGANISM #2 <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% EFFLUENT SAMPLE

PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	4	SM18 2550B stored at 4 degree C until test setup	06/10/09 1000 hrs
pH Standard Units	7.55	SM18 4500-H B	06/10/09 1000 hrs
Conductance µMohs	637	SM18 2510B	06/10/09 1000 hrs
Dissolved Oxygen mg/L	7.7	SM18 4500-O G	06/10/09 1000 hrs
Total Residual Chlorine mg/L	0.05	SM18 4500-CI G	06/10/09 1000 hrs
Unionized Ammonia mg/L	0.068x0.03<0.010	SM18 4500-NH3 F @ 25 degree C	06/15/09 1300 hrs
*Total Alkalinity mg/L	201	SM18 2320B	06/10/09 1300 hrs
*Total Hardness mg/L	200	SM18 2340 C	06/10/09 1000 hrs

*Recommended by USEPA guidance, not a required analysis.

¹ Samples shall only be filtered if indigenous organisms are present that may be confused with, or attack, the test organisms.

² Filters shall have a sieve size of 60 microns or greater.

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT
 (TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% UPSTREAM SAMPLE			
PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	25	SM18 2550B stored at 4 degree C until test setup	06/10/09 1000 hrs
pH Standard Units	7.89	SM18 4500-H B	06/10/09 1000 hrs
Conductance µMohs	239	SM18 2510B	06/10/09 1000 hrs
Dissolved Oxygen mg/L	8.0	SM18 4500-O G	06/10/09 1000 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-Cl G	06/10/09 1000 hrs
Unionized Ammonia mg/L	<0.05x0.07<0.010	SM18 4500-NH3 F @ 25 degree C	06/15/09 1300 hrs
*Total Alkalinity mg/L	59.7	SM18 2320B	06/10/09 1300 hrs
*Total Hardness mg/L	80	SM18 2340 C	06/10/09 1000 hrs

*Recommended by USEPA guidance, not a required analysis.

PRELIMINARY TEST ACCEPTABILITY MATRIX (FOR USE BY PERMITTEE IN DETERMINING TEST VALIDITY)
PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC): As indicated on permit. Test is invalid otherwise.
EFFLUENT SAMPLE TYPE: As indicated on permit. Test is invalid otherwise.
TEST TYPE: Acute Static Non-Renewal Test or other as indicated on permit. Test is invalid otherwise.
TEST DURATION: Forty-eight (48) hours or as indicated on permit. Test is invalid otherwise.
TEST ORGANISMS: As indicated on permit. Test is invalid otherwise.
DILUTION WATER USED TO ACHIEVE AEC: Upstream receiving water required if available.
TEST METHOD: The only acceptable method is the <i>most current edition</i> of <u>Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms</u> , or other as specifically assigned by EPA for determining NPDES compliance. Test is invalid otherwise.
TEST START DATE & TIME: Unless otherwise specified in writing by EPA, if >36 hours lapse between collection and initiation, test is invalid.
FILTER MESH SIEVE SIZE: Unless otherwise specified in writing by EPA, if sieve size is smaller than 60 microns, test is invalid.
90% OR GREATER SURVIVAL IN LABORATORY CONTROL(S) (Y/N): If NO, test is invalid.

PARAMETER	RESULT	NOTES	WHEN ANALYZED
Temperature °C	0 - 6	Unless received by the laboratory on the same day as collected, values outside this range invalidate the test.	Upon receipt

³ Where no upstream control is available, enter results from laboratory or synthetic control.

single
100%

ENVIRONMENTAL ANALYSIS SOUTH, INC.

4000 East Jackson Blvd
Jackson, MO 63755
Phone: (573) 204-8817 Fax: (573) 204-8818



WHOLE EFFLUENT TOXICITY TESTING CHAIN OF CUSTODY

CLIENT: City of Sedalia

NPDES PERMIT NUMBER: MO-0101567
Sedalia Southeast Wastewater

EFFLUENT NAME: Treatment Plant GRAB 24 HR COMPOSITE
(LEGAL NAME)

COLLECTION DATA: START DATE: 8 June 09 START TIME: 7:30 AM

FINISH DATE: 9 June 09 FINISH TIME: 7:30 AM

UPSTREAM NAME: Breakfast Branch (GRAB SAMPLE)
(LEGAL NAME)

COLLECTION DATA: DATE: _____ TIME: _____

SAMPLER NAME: _____ CARRIER: _____
(PRINT NAME)

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:

- Sampling & holding time errors (Will result in a setup charge of \$100 to the client)
- Commercial carrier delivery problems or errors (Will result in a setup charge of \$100 to the client)
- Problems with health or delivery of test organisms by vendor (No setup charge to client)

SAMPLER CHECK LIST

- NO HEADSPACE IN BOTTLES
- ~~SEE SAMPLES BY NEXT DAY CARRIER OR DELIVER TO LAB ON~~ 6/10/09
- SAMPLES TO BE HAND DELIVERED TO LABORATORY SAME DAY AS TEST SETUP
- SUFFICIENT ICE TO COOL SAMPLES TO A RANGE OF 0 - 5°C WHEN SHIPPING OVERNIGHT

RELINQUISHED BY: Ruth Blahly DATE: 9 June 09 TIME: 8:00 AM

LABORATORY USE ONLY

EFFLUENT LOG NUMBER: 1030422

RECEIVED TEMPERATURE: 4 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

UPSTREAM LOG NUMBER: _____

RECEIVED TEMPERATURE: _____ °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

RECEIVED BY: Ann Wagner DATE: 6/10/09 TIME: 9:30 UPS

Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1205933
June 23, 2010 through June 25, 2010

Tests performed by:

John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

1. Report Summation
 - 1.1. Data Summation
 - 1.2. Conclusion
2. Method Summation
 - 2.1. Test Conditions and Methods
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 - 2.2.1. *Pimephales promelas* data
 - 2.2.2. *Ceriodaphnia dubia* data
 - 2.3. Literature Cited
3. Raw Data Bench Sheets
 - 3.1. Initial observations (page 1)
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 - 3.3. Twenty-four (24) hour Observations (page 1)
 - 3.4. Forty-eight (48) hour Observations (page 1)
 - 3.5. Survival Data Table (page 2)
 - 3.6. Test Comments (page 3)
4. Chain of Custody
5. MO DNR "Whole Effluent Toxicity (WET) Test Report (Form 780-1899)

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REPORT OF ACUTE TOXICITY TESTING
Sedalla Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1205933
June 23, 2010 through June 25, 2010

1. REPORT SUMMATION:

1.1. Single Dilution Data Summation

	<i>Pimephales promelas</i> Acute Toxicity Test	<i>Ceriodaphnia dubia</i> Acute Toxicity Test
Survival in the Effluent at 48 Hours	100%	100%
Survival in the Reconstituted Control (RC) at 48 Hours	100%	100%
Survival in the Upstream Control (UC) at 48 Hours	N/A	N/A
Statistical Results Comparing the Survival Data of the Effluent with the Control (arc sine square root transformation)	No Significant Difference at alpha = 0.05 PASS	No Significant Difference at alpha = 0.05 PASS

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

Conclusion: The mortality observed with both species was determined not to be significantly different than that observed in the control sample.

Based on these results the outfall passed the whole effluent toxicity test with both indicator species.

Approved by _____


Sara C. Shields, Chemist

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1205933
June 23, 2010 through June 25, 2010

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

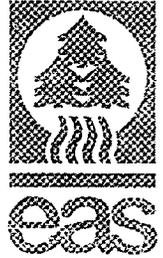
	<i>Ceriodaphnia dubia</i> :	<i>Pimephales promelas</i> :
Test duration:	48 hours	48 hours
Temperature:	24 - 26 degree Celsius	24 - 26 degree Celsius
Light quality:	Ambient laboratory illumination	Ambient laboratory illumination
Photoperiod:	16 hour light, 8 hours dark	16 hour light, 8 hours dark
Control Water:	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
Dilution Water:	Upstream Water - If unavailable or toxic, then control water will be used.	Upstream Water - If unavailable or toxic, then control water will be used.
Size of test vessel:	30 milliliters	250 milliliters
Volume of test solution:	15 milliliters	200 milliliters
Age of test organisms:	<24 hours	1 -14 days (all same age)
Number of organisms/test vessel:	5	10
Number of replicates/concentration:	4	4
Number of organisms/concentration:	20	40 for a single dilution test and 20 for a multiple dilution test
Feeding regime:	None (fed prior to test)	None (fed prior to test)
Aeration:	None	None
Test acceptability criterion:	90% or greater survival in controls	90% or greater survival in controls

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from ARO (Aquatic Research Organisms) located in Hampton, New Hampshire and shipped overnight for use in the whole effluent toxicity test.

Environmental Analysis South, Inc.

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1205933
June 23, 2010 through June 25, 2010

2.2. REFERENCE TOXICITY TEST:

Environmental Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on June 2, 2010 using KCL Lot #41713. Following are the results:

- 2.2.1. *P. promelas* - 48 hr. Acute Test – LC₅₀ = 1.105 g/l 95%CI (0.781-1.428g/l)
EAS %CV = 14.7%
National Warning Limits (75th percentile) = 19%CV
National Control Limits (90th percentile) = 33%CV
- 2.2.2. *C. dubia* - 48 hr. Acute Test – LC₅₀ = 0.462 g/l 95%CI (0.267-0.657g/l)
EAS %CV = 21.1%
National Warning Limits (75th percentile) = 29%CV
National Control Limits (90th percentile) = 34%CV

2.3. LITERATURE CITED:

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 5th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2)*. June 2000. EPA 833-R-00-003.

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

CLIENT NAME: Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite

NPDES NUMBER: MO-0101567

TYPE OF METHOD: single dilution, 48 hr WET, PP & CD, AEC=100%

DATE & TIME OF COLLECTION: 06/21/10 0730 hrs - 06/22/10 0730 hrs by R.B.

DATE & TIME OF SUBMISSION: 06/23/10 1045 hrs by UPS

INITIAL OBSERVATIONS

LOG NUMBER / ID NUMBER

DATE

TIME

ANALYST

QC LOT

QC EXP VALUE

INT EFFL

INT UC

INT RC

UPSTREAM: Breakfast Branch

UNAVAILABLE

PH - SU

TEMPERATURE °C RECEIVED

SPECIFIC CONDUCTANCE umhos

HARDNESS - ppm

CHLORINE - ppm

DISSOLVED OXYGEN - ppm

TOTAL ALKALINITY - ppm

INITIAL AMMONIA - ppm

TOTAL DISSOLVED SOLIDS - ppm

0 HOUR OBSERVATIONS

DATE

TIME

ANALYST

QC LOT

QC EXP VALUE

RC

UC

100%

50%

25%

12.50%

6.25%

X %AEC

PH - SU

TEMPERATURE °C

SPECIFIC CONDUCTANCE umhos

DISSOLVED OXYGEN - ppm

48 HOUR OBSERVATIONS - PP

DATE

TIME

ANALYST

QC LOT

QC EXP VALUE

RC

UC

100%

50%

25%

12.50%

6.25%

X %AEC

PH - SU

TEMPERATURE °C

SPECIFIC CONDUCTANCE umhos

DISSOLVED OXYGEN - ppm

INITIAL AMMONIA - ppm

24 HOUR OBSERVATIONS - CD

DATE

TIME

ANALYST

QC LOT

QC EXP VALUE

RC

UC

100%

50%

25%

12.50%

6.25%

X %AEC

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/A-90/027
Fifth Edition October 2002

Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite EAS LOG# 1205933

Date Test Began: June 23, 2010 Time Test Began: 1100 hrs Analyst 1: DFW
 Date Test Finished: June 25, 2010 Time Test Finished: 1100 hrs Analyst 2: KJR
 Analyst 3: SCS

P. promelas (PP) AGE: 10 days HATCH NUMBER: 060910th aro

PERIOD	RC	UC	100%	50%	25%	12.50%	6.25%	X% AEC
0 HR-PP	ALIVE 10,10,10,10							
24 HR-PP	ALIVE 10,10,10,10							
48 HR-PP	ALIVE 10,10,10,10							

Ceriodaphnia dubia (CD) AGE: <24 hours HATCH NUMBER: 052210cd aro

PERIOD	RC	UC	100%	50%	25%	12.50%	6.25%	X% AEC
0 HR-CD	ALIVE 5,5,5,5							
24 HR-CD	ALIVE 5,5,5,5							
48 HR-CD	ALIVE 5,5,5,5							

Approved by: *[Signature]*

Date: 07/09/2010

ENVIRONMENTAL ANALYSIS SOUTH, INC.

4000 East Jackson Blvd
Jackson, MO 63755
Phone: (573) 204-8817 Fax: (573) 204-8818



Single

**WHOLE EFFLUENT TOXICITY TESTING
CHAIN OF CUSTODY**

CLIENT: City of Sedalia

NPDES PERMIT NUMBER: MO-0101567
Sedalia Southeast Wastewater

EFFLUENT NAME: Treatment Plant GRAB 24 HR COMPOSITE
(LEGAL NAME)

COLLECTION DATA: START DATE: 21 June 2010 START TIME: 7:30 AM

FINISH DATE: 22 June 2010 FINISH TIME: 7:30 AM

UPSTREAM NAME: Basin East Branch (GRAB SAMPLE)
(LEGAL NAME)

COLLECTION DATA: DATE: _____ TIME: _____

SAMPLER NAME: _____ CARRIER: _____
(PRINT NAME)

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:
• Sampling & holding time errors (Will result in a setup charge of \$100 to the client)
• Commercial carrier delivery problems or errors (Will result in a setup charge of \$100 to the client)
• Problems with health or delivery of test organisms by vendor (No setup charge to client)

SAMPLER CHECK LIST
NO HEADSPACE IN BOTTLES
~~NO HEADSPACE IN BOTTLES~~
SAMPLES TO BE HAND DELIVERED TO LABORATORY SAME DAY AS TEST SETUP
~~SAMPLES TO BE HAND DELIVERED TO LABORATORY SAME DAY AS TEST SETUP~~
RELINQUISHED BY: Paul Bley DATE: 22 June 10 TIME: 8:30 AM

LABORATORY USE ONLY
EFFLUENT LOG NUMBER: 1205933
RECEIVED TEMPERATURE: 3 °C THERMOMETER ASSIGNED NUMBER: _____
HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST
UPSTREAM LOG NUMBER: _____
RECEIVED TEMPERATURE: _____ °C THERMOMETER ASSIGNED NUMBER: _____
HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST
RECEIVED BY: Ani Wagon DATE: 6/23/10 TIME: 10:45 AM



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM - P.O. BOX 176, JEFFERSON CITY MO, 65102
WHOLE EFFLUENT TOXICITY (WET) TEST REPORT
 (TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

PART 1 - TO BE COMPLETED IN FULL BY PERMITTEE

FACILITY NAME Sedalia Southeast Wastewater Treatment Plant		DATE & TIME COLLECTED EFFLUENT 06/21/10 0730-06/22/10 0730 UPSTREAM unavailable	
PERMIT NUMBER MO-0101567		PERMIT OUTFALL NUMBER Outfall # 001	
COLLECTOR'S NAME R.B.			
RECEIVING STREAM COLLECTION SITE AND DESCRIPTION Breakfast Branch			
PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC) 100%		EFFLUENT SAMPLE TYPE (CHECK ONE) <input checked="" type="checkbox"/> 24HR COMPOSITE <input type="checkbox"/> GRAB <input type="checkbox"/> OTHER	
SAMPLE NUMBER EFFLUENT 1205933 UPSTREAM unavailable		UPSTREAM SAMPLE TYPE (CHECK ONE) <input type="checkbox"/> 24HR COMPOSITE <input type="checkbox"/> GRAB <input checked="" type="checkbox"/> OTHER unavailable	
PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR CHLORINE _____ mg/L		PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR AMMONIA _____ mg/L	

PART 2 - TO BE COMPLETED IN FULL BY PERFORMING LABORATORY

PERFORMING LABORATORY Environmental Analysis South, Inc.		TEST TYPE Acute Static Non renewal Test Single Dilution	
FINAL REPORT NUMBER MO_1205933		TEST DURATION 48 hour	
DATE OF LAST REFERENCE TOXICANT TESTING June 2, 2010		TEST METHOD Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms	
DATE AND TIME SAMPLES RECEIVED AT LABORATORY June 23, 2010 1045 hrs by UPS		TEST START DATE AND TIME 06/23/10 1100 hrs	TEST END DATE AND TIME 06/25/10 1100 hrs
SAMPLE DECHLORINATED PRIOR TO ANALYSIS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____		TEST ORGANISM #1 AND AGE Pimephales promelas 10 days	TEST ORGANISM #2 AND AGE Ceriodaphnia dubia < 24 hours
SAMPLE FILTERED ¹ PRIOR TO ANALYSIS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____		50% OR GREATER SURVIVAL IN SYNTHETIC CONTROL? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	DILUTION WATER USED TO ACHIEVE AEC none
FILTER MESH SIEVE SIZE ² None		EFFLUENT ORGANISM #1 % MORTALITY AT AEC 0%	EFFLUENT ORGANISM #2 % MORTALITY AT AEC 0%
SAMPLE AERATED DURING TESTING? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		UPSTREAM ORGANISM #1 % MORTALITY RC=0%	UPSTREAM ORGANISM #2 % MORTALITY RC=0%
pH ADJUSTED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____		TEST RESULT AT AEC FOR ORGANISM #1 <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL	TEST RESULT AT AEC FOR ORGANISM #2 <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% EFFLUENT SAMPLE

PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	3	SM18 2550B stored at 4 degree C until test setup	06/23/10 1050 hrs
pH Standard Units	7.87	SM18 4500-H B	06/23/10 1050 hrs
Conductance µMols	778	SM18 2510B	06/23/10 1050 hrs
Dissolved Oxygen mg/L	8.4	SM18 4500-O G	06/23/10 1050 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-Cl G	06/23/10 1050 hrs
Unionized Ammonia mg/L	<0.05x0.04<0.010	SM18 4500-NH3 F @ 25 degree C	07/02/10 1000 hrs
*Total Alkalinity mg/L	200	SM18 2320B	06/23/10 1130 hrs
*Total Hardness mg/L	300	SM18 2340 C	06/23/10 1050 hrs

*Recommended by USEPA guidance, not a required analysis.

¹ Samples shall only be filtered if indigenous organisms are present that may be confused with, or attack, the test organisms.
² Filters shall have a sieve size of 60 microns or greater.

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% UPSTREAM SAMPLE			
PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	25	SM18 2550B stored at 4 degree C until test setup	06/23/10 1050 hrs
pH Standard Units	8.02	SM18 4500-H B	06/23/10 1050 hrs
Conductance µMohs	277	SM18 2510B	06/23/10 1050 hrs
Dissolved Oxygen mg/L	8.0	SM18 4500-O G	06/23/10 1050 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-Cl G	06/23/10 1050 hrs
Unionized Ammonia mg/L	<0.05x0.05<0.010	SM18 4500-NH3 F @ 25 degree C	07/02/10 1000 hrs
*Total Alkalinity mg/L	53.6	SM18 2320B	06/23/10 1130 hrs
*Total Hardness mg/L	80	SM18 2340 C	06/23/10 1050 hrs

*Recommended by USEPA guidance, not a required analysis.

PRELIMINARY TEST ACCEPTABILITY MATRIX FOR USE BY PERMITTEES IN DETERMINING TEST VALIDITY
PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC): As indicated on permit. Test is invalid otherwise.
EFFLUENT SAMPLE TYPE: As indicated on permit. Test is invalid otherwise.
TEST TYPE: Acute Static Non-Renewal Test or other as indicated on permit. Test is invalid otherwise.
TEST DURATION: Forty-eight (48) hours or as indicated on permit. Test is invalid otherwise.
TEST ORGANISMS: As indicated on permit. Test is invalid otherwise.
DILUTION WATER USED TO ACHIEVE AEC: Upstream receiving water required if available.
TEST METHOD: The only acceptable method is the <i>most current edition</i> of <u>Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms</u> , or other as specifically assigned by EPA for determining NPDES compliance. Test is invalid otherwise.
TEST START DATE & TIME: Unless otherwise specified in writing by EPA, if >36 hours lapse between collection and initiation, test is invalid.
FILTER MESH SIEVE SIZE: Unless otherwise specified in writing by EPA, if sieve size is smaller than 60 microns, test is invalid.
90% OR GREATER SURVIVAL IN LABORATORY CONTROL(S) (Y/N): If NO, test is invalid.

PARAMETER	RESULT	NOTES	WHEN ANALYZED
Temperature °C	0 - 6	Unless received by the laboratory on the same day as collected, values outside this range invalidate the test.	Upon receipt

³ Where no upstream control is available, enter results from laboratory or synthetic control.

Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1311711
June 15, 2011 through June 17, 2011

Tests performed by:

John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

1. Report Summation
 - 1.1. Data Summation
 - 1.2. Conclusion
2. Method Summation
 - 2.1. Test Conditions and Methods
 - 2.2. Potassium chloride Reference Salt Test
 - 2.2.1. *Pimephales promelas* data
 - 2.2.2. *Ceriodaphnia dubia* data
 - 2.3. Literature Cited
3. Raw Data Bench Sheets
 - 3.1. Initial observations (page 1)
 - 3.2. Zero hour Observations (page 1)
 - 3.3. Twenty-four (24) hour Observations (page 1)
 - 3.4. Forty-eight (48) hour Observations (page 1)
 - 3.5. Survival Data Table (page 2)
 - 3.6. Test Comments (page 3)
4. Chain of Custody
5. MO DNR "Whole Effluent Toxicity (WET) Test Report (Form 780-1899)

Environmental Analysis South, Inc.

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1311711
June 15, 2011 through June 17, 2011

1. REPORT SUMMATION:

1.1. Single Dilution Data Summation

	<i>Pimephales promelas</i> Acute Toxicity Test	<i>Ceriodaphnia dubia</i> Acute Toxicity Test
Survival in the Effluent at 48 Hours	100%	100%
Survival in the Reconstituted Control (RC) at 48 Hours	100%	100%
Survival in the Upstream Control (UC) at 48 Hours	100%	100%
Statistical Results Comparing the Survival Data of the Effluent with the Control (arc sine square root transformation)	No Significant Difference at alpha = 0.05 PASS	No Significant Difference at alpha = 0.05 PASS

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

Conclusion: The mortality observed with both species was determined not to be significantly different than that observed in the control sample.

Based on these results the outfall passed the whole effluent toxicity test with both indicator species.

Approved by _____

Sara C. Shields, Chemist

Environmental Analysis South, Inc.

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1311711
June 15, 2011 through June 17, 2011

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

	<i>Ceriodaphnia dubia</i> :	<i>Pimephales promelas</i> :
Test duration:	48 hours	48 hours
Temperature:	24 - 26 degree Celsius	24 - 26 degree Celsius
Light quality:	Ambient laboratory illumination	Ambient laboratory illumination
Photoperiod:	16 hour light, 8 hours dark	16 hour light, 8 hours dark
Control Water:	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
Dilution Water:	Upstream Water - If unavailable or toxic, then control water will be used.	Upstream Water - If unavailable or toxic, then control water will be used.
Size of test vessel:	30 milliliters	250 milliliters
Volume of test solution:	15 milliliters	200 milliliters
Age of test organisms:	<24 hours	1 -14 days (all same age)
Number of organisms/test vessel:	5	10
Number of replicates/concentration:	4	4
Number of organisms/concentration:	20	40 for a single dilution test and 20 for a multiple dilution test
Feeding regime:	None (fed prior to test)	None (fed prior to test)
Aeration:	None	None
Test acceptability criterion:	90% or greater survival in controls	90% or greater survival in controls

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from C-K Associates Inc. located in Baton Rouge, Louisiana and shipped overnight for use in the whole effluent toxicity test.

Environmental Analysis South, Inc.

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1311711
June 15, 2011 through June 17, 2011

2.2. REFERENCE TOXICITY TEST:

Environmental Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on June 8, 2011 using KCL Lot #41713. Following are the results:

- 2.2.1. *P. promelas* - 48 hr. Acute Test – LC₅₀ = 1.071 g/l 95%CI (0.736-1.405 g/l)
EAS %CV = 15.6%
National Warning Limits (75th percentile) = 19%CV
National Control Limits (90th percentile) = 33%CV
- 2.2.2. *C. dubia* - 48 hr. Acute Test – LC₅₀ = 0.467 g/l 95%CI (0.303-0.631g/l)
EAS %CV = 17.5%
National Warning Limits (75th percentile) = 29%CV
National Control Limits (90th percentile) = 34%CV

2.3. LITERATURE CITED:

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 5th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2)*. June 2000. EPA 833-R-00-003.

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

CLIENT NAME: Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite
NPDES NUMBER: MO-0107567

TYPE OF METHOD: single dilution, 48 hr WET, PP & CD, AEC=100%
DATE & TIME OF COLLECTION: 06/13/11 0700 hrs - 06/14/11 0700 hrs by Dennis Vinson
DATE & TIME OF SUBMISSION: 06/15/11 1030 hrs by UPS

Upstream: Breakfast Branch
Collected: 06/14/11 0645 hrs by Dennis Vinson

INITIAL OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	INT EFFLUENT UC	INT RC
LOG NUMBER / ID NUMBER						1311711	4014
pH - SU	06/15/11	1045 hrs	SCS	SB114 (8.8-9.2)	9.08	7.93	7.93
TEMPERATURE °C RECEIVED	06/15/11	1045 hrs	SCS	EAS 106		3	24
SPECIFIC CONDUCTANCE umhos	06/15/11	1045 hrs	SCS	ERA P185-506(359-407)	388	753	239
HARDNESS - ppm	06/15/11	1045 hrs	SCS	ERA P170-507(107-134)	120	240	80
CHLORINE - ppm	06/15/11	1045 hrs	SCS	tap water	+	<0.04	<0.04
DISSOLVED OXYGEN - ppm	06/15/11	1045 hrs	SCS	cal@840		9.8	8.3
TOTAL ALKALINITY - ppm	06/15/11	1230 hrs	SCS	ERA P185-506(70.8-83.7)	74.4	193	61.7
INITIAL AMMONIA - ppm	06/21/11	1245 hrs	JPC	EAS #1981 (8-12)	10.4	0.248	<0.050
TOTAL DISSOLVED SOLIDS - ppm							
0 HOUR OBSERVATIONS					QC EXP VALUE	RC	UC
pH - SU	06/15/11	1100 hrs	SCS	SB114 (8.8-9.2)	9.08	7.96	8.03
TEMPERATURE °C	06/15/11	1100 hrs	SCS	EAS 106		24.4	23.7
SPECIFIC CONDUCTANCE umhos	06/15/11	1100 hrs	SCS	ERA P185-506(359-407)	388	240	267
DISSOLVED OXYGEN - ppm	06/15/11	1100 hrs	SCS	cal@840		7.7	9.5
50%							
25%							
12.5%							
6.25%							
X %AEC							

24 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC
pH - SU	06/16/11	1100 hrs	SCS	SB114 (8.8-9.2)	9.06	7.86	8.31
TEMPERATURE °C	06/16/11	1100 hrs	SCS	EAS 106		24.4	24.4
SPECIFIC CONDUCTANCE umhos	06/16/11	1100 hrs	SCS	ERA P185-506(359-407)	393	267	304
DISSOLVED OXYGEN - ppm	06/16/11	1100 hrs	SCS	cal@840		7.6	7.8
48 HOUR OBSERVATIONS - PP					QC EXP VALUE	RC	UC
pH - SU	06/17/11	1100 hrs	SCS	SB114 (8.8-9.2)	8.95	8.16	8.45
TEMPERATURE °C	06/17/11	1100 hrs	SCS	EAS 106		24.4	24.4
SPECIFIC CONDUCTANCE umhos	06/17/11	1100 hrs	SCS	ERA P185-506(359-407)	371	261	308
DISSOLVED OXYGEN - ppm	06/17/11	1100 hrs	SCS	cal@840		7.8	7.9
50%							
25%							
12.5%							
6.25%							
X %AEC							

24 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC
pH - SU	06/16/11	1100 hrs	SCS	SB114 (8.8-9.2)	9.06	8.00	8.47
TEMPERATURE °C	06/16/11	1100 hrs	SCS	EAS 106		24.4	24.4
SPECIFIC CONDUCTANCE umhos	06/16/11	1100 hrs	SCS	ERA P185-506(359-407)	394	253	283
DISSOLVED OXYGEN - ppm	06/16/11	1100 hrs	SCS	cal@840		7.9	8.0
48 HOUR OBSERVATIONS - CD					QC EXP VALUE	RC	UC
pH - SU	06/17/11	1100 hrs	SCS	SB114 (8.8-9.2)	8.95	8.52	8.41
TEMPERATURE °C	06/17/11	1100 hrs	SCS	EAS 106		24.4	24.4
SPECIFIC CONDUCTANCE umhos	06/17/11	1100 hrs	SCS	ERA P185-506(359-407)	371	265	287
DISSOLVED OXYGEN - ppm	06/17/11	1100 hrs	SCS	cal@840		7.8	7.6
50%							
25%							
12.5%							
6.25%							
X %AEC							

Approved by: *[Signature]*

Date: 06/14/11

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite EAS LOG# 1311711

Date Test Began: June 15, 2011 Time Test Began: 1100 hrs Analyst 1: DFW
 Date Test Finished: June 17, 2011 Time Test Finished: 1100 hrs Analyst 2: KJR
 Analyst 3: SCS

P. promelas (PP) AGE: 5 days HATCH NUMBER: 8636 c-k

PERIOD	RC	UC	100%	50%	25%	12.5%	6.25%	X% AEC
0 HR-PP	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
	10,10,10,10	10,10,10,10	10,10,10,10					
24 HR-PP	ALIVE	ALIVE	ALIVE					
	10,10,10,10	10,10,10,10	10,10,10,10					
48 HR-PP	ALIVE	ALIVE	ALIVE					
	10,10,10,10	10,10,10,10	10,10,10,10					

Ceriodaphnia dubia (CD) AGE: <24 hours HATCH NUMBER: 2338 c-k

PERIOD	RC	UC	100%	50%	25%	12.5%	6.25%	X% AEC
0 HR-CD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
	5,5,5,5	5,5,5,5	5,5,5,5					
24 HR-CD	ALIVE	ALIVE	ALIVE					
	5,5,5,5	5,5,5,5	5,5,5,5					
48 HR-CD	ALIVE	ALIVE	ALIVE					
	5,5,5,5	5,5,5,5	5,5,5,5					

Approved by: *[Signature]*

Date: 06/30/2011

Single
1207

ENVIRONMENTAL ANALYSIS SOUTH, INC.

4000 East Jackson Blvd
Jackson, MO 63755
Phone: (573) 204-8817 Fax: (573) 204-8818



11361

WHOLE EFFLUENT TOXICITY TESTING CHAIN OF CUSTODY

CLIENT: City of Sedalia

NPDES PERMIT NUMBER: MO-0101567

EFFLUENT NAME: Outfall 001 GRAB 24 HR COMPOSITE
(LEGAL NAME)

COLLECTION DATA: START DATE: 6-13-11 START TIME: 7:00 AM

FINISH DATE: 6-14-11 FINISH TIME: 7:00 am

UPSTREAM NAME: Breakfast Branch (GRAB SAMPLE)
(LEGAL NAME)

COLLECTION DATA: DATE: 6-14-11 TIME: 6:45 am

SAMPLER NAME: Dennis Vinson CARRIER: _____
(PRINT NAME)

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:

- Sampling & holding time errors (Will results in a setup charge of \$100 to the client)
- Commercial carrier delivery problems or errors (Will results in a setup charge of \$100 to the client)
- Problems with health or delivery of test organisms by vendor (No setup charge to client)

SAMPLER CHECK LIST

- NO HEADSPACE IN BOTTLES
- SHIP SAMPLES BY NEXT DAY CARRIER OR DELIVER TO LAB ON 6, 15, 11
- SAMPLES TO BE HAND DELIVERED TO LABORATORY SAME DAY AS TEST SETUP
- SUFFICIENT ICE TO COOL SAMPLES TO A RANGE OF 0 - 6° C WHEN SHIPPING OVERNIGHT

RELINQUISHED BY: Dennis Vinson DATE: 6-14-11 TIME: 7:15 am

LABORATORY USE ONLY

EFFLUENT LOG NUMBER: 1311711

RECEIVED TEMPERATURE: 3 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

UPSTREAM LOG NUMBER: 1311711-A

RECEIVED TEMPERATURE: 2 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

RECEIVED BY: [Signature] DATE: 6/15/11 TIME: 10:30 UF

CITY OF SEDALIA

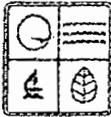
CHAIN OF CUSTODY

MO-0101567

SURVEY NO. SETP DATE 6-13-11 COLLECTED BY 6-14-11 9:20 AM
 SET
 9:00 AM

NUMBER OF SAMPLES 2 TYPE OF SAMPLE INFLUENT EFFLUENT OTHER: Upstream Sample
 B.B.

SAMPLE NO.	SAMPLE COMP GRAB		RELINQUISHED BY	DATE	TIME
1	✓	WET TEST	DU	6-14-11	9:15 AM
		6-14-11	RECEIVED BY	PHIL W.	
		6:45 AM	DATE	6-14-11	
2	✓	BREAKFAST BRANCH Upstream Sample		7:15 AM	
			RELINQUISHED BY		
			DATE		
			TIME		
			RECEIVED BY		
			DATE		
			TIME		
			RELINQUISHED BY		
			DATE		
			TIME		
			RECEIVED BY		
			DATE		
			TIME		



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM - P.O. BOX 176, JEFFERSON CITY MO, 65102
WHOLE EFFLUENT TOXICITY (WET) TEST REPORT
 (TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

PART A - TO BE COMPLETED IN FULL BY PERMITTEE	
FACILITY NAME Sedalia Southeast Wastewater Treatment Plant	DATE & TIME COLLECTED EFFLUENT 06/13/11 0700-06/14/11 0700 UPSTREAM 06/14/11 0645
PERMIT NUMBER MO-0101567	PERMIT OUTFALL NUMBER Outfall # 001
COLLECTOR'S NAME Dennis Vinson	
RECEIVING STREAM COLLECTION SITE AND DESCRIPTION Breakfast Branch	
PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC) 100%	EFFLUENT SAMPLE TYPE (CHECK ONE) <input checked="" type="checkbox"/> 24HR COMPOSITE <input type="checkbox"/> GRAB <input type="checkbox"/> OTHER
SAMPLE NUMBER EFFLUENT 1311711 UPSTREAM 1311711A	UPSTREAM SAMPLE TYPE (CHECK ONE) <input type="checkbox"/> 24HR COMPOSITE <input checked="" type="checkbox"/> GRAB <input type="checkbox"/> OTHER
PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR CHLORINE _____ mg/L	PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR AMMONIA _____ mg/L

PART B - TO BE COMPLETED IN FULL BY PERFORMING LABORATORY		
PERFORMING LABORATORY Environmental Analysis South, Inc.	TEST TYPE Acute Static Non renewal Test Single Dilution	
FINAL REPORT NUMBER MO_1311711	TEST DURATION 48 hour	
DATE OF LAST REFERENCE TOXICANT TESTING June 8, 2011	TEST METHOD Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms	
DATE AND TIME SAMPLES RECEIVED AT LABORATORY 06/15/11 1030 hrs by UPS	TEST START DATE AND TIME 06/15/11 1100 hrs	TEST END DATE AND TIME 06/17/11 1100 hrs
SAMPLE DECHLORINATED PRIOR TO ANALYSIS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____	TEST ORGANISM #1 AND AGE Pimephales promelas 5 days	TEST ORGANISM #2 AND AGE Ceriodaphnia dubia < 24 hours
SAMPLE FILTERED ¹ PRIOR TO ANALYSIS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____	50% OR GREATER SURVIVAL IN SYNTHETIC CONTROL? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	DILUTION WATER USED TO ACHIEVE AEC none
FILTER MESH SIEVE SIZE? None	EFFLUENT ORGANISM #1 % MORTALITY AT AEC 0%	EFFLUENT ORGANISM #2 % MORTALITY AT AEC 0%
SAMPLE AERATED DURING TESTING? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	UPSTREAM ORGANISM #1 % MORTALITY 0%	UPSTREAM ORGANISM #2 % MORTALITY 0%
pH ADJUSTED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____	TEST RESULT AT AEC FOR ORGANISM #1 <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL	TEST RESULT AT AEC FOR ORGANISM #2 <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% EFFLUENT SAMPLE			
PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	3	SM18 2550B stored at 4 degree C until test setup	06/15/11 1045 hrs
pH Standard Units	7.93	SM18 4500-H B	06/15/11 1045 hrs
Conductance µMols	753	SM18 2510B	06/15/11 1045 hrs
Dissolved Oxygen mg/L	9.8	SM18 4500-O G	06/15/11 1045 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-Cl G	06/15/11 1045 hrs
Unionized Ammonia mg/L	0.25x0.04=0.010	SM18 4500-NH3 F @ 25 degree C	06/21/11 1245 hrs
*Total Alkalinity mg/L	193	SM18 2320B	06/15/11 1230 hrs
*Total Hardness mg/L	240	SM18 2340 C	06/15/11 1045 hrs

*Recommended by USEPA guidance, not a required analysis.

¹ Samples shall only be filtered if indigenous organisms are present that may be confused with, or attack, the test organisms.
² Filters shall have a sieve size of 60 microns or greater.

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% UPSTREAM SAMPLE			
PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	2	SM18 2550B stored at 4 degree C until test setup	06/15/11 1045 hrs
pH Standard Units	8.04	SM18 4500-H B	06/15/11 1045 hrs
Conductance µMohs	287	SM18 2510B	06/15/11 1045 hrs
Dissolved Oxygen mg/L	10.1	SM18 4500-O G	06/15/11 1045 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-Cl G	06/15/11 1045 hrs
Unionized Ammonia mg/L	0.151x0.05<0.010	SM18 4500-NH3 F @ 25 degree C	06/21/11 1245 hrs
*Total Alkalinity mg/L	92.7	SM18 2320B	06/15/11 1230 hrs
*Total Hardness mg/L	120	SM18 2340 C	06/15/11 1045 hrs

*Recommended by USEPA guidance, not a required analysis.

PRELIMINARY TEST ACCEPTABILITY MATRIX (FOR USE BY PERMITEE IN DETERMINING TEST VALIDITY)
<p>PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC): As indicated on permit. Test is invalid otherwise.</p> <p>EFFLUENT SAMPLE TYPE: As indicated on permit. Test is invalid otherwise.</p> <p>TEST TYPE: Acute Static Non-Renewal Test or other as indicated on permit. Test is invalid otherwise.</p> <p>TEST DURATION: Forty-eight (48) hours or as indicated on permit. Test is invalid otherwise.</p> <p>TEST ORGANISMS: As indicated on permit. Test is invalid otherwise.</p> <p>DILUTION WATER USED TO ACHIEVE AEC: Upstream receiving water required if available.</p> <p>TEST METHOD: The only acceptable method is the <i>most current edition</i> of <u>Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms</u>, or other as specifically assigned by EPA for determining NPDES compliance. Test is invalid otherwise.</p> <p>TEST START DATE & TIME: Unless otherwise specified in writing by EPA, if >36 hours lapse between collection and initiation, test is invalid.</p> <p>FILTER MESH SIEVE SIZE: Unless otherwise specified in writing by EPA, if sieve size is smaller than 60 microns, test is invalid.</p> <p>90% OR GREATER SURVIVAL IN LABORATORY CONTROL(S) (Y/N): If NO, test is invalid.</p>

PARAMETER	RESULT	NOTES	WHEN ANALYZED
Temperature °C	0 - 6	Unless received by the laboratory on the same day as collected, values outside this range invalidate the test.	Upon receipt

¹ Where no upstream control is available, enter results from laboratory or synthetic control.

Environmental Analysis South, Inc.

4000 East Jackson Blvd • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1416021
June 13, 2012 through June 15, 2012

Tests performed by:

John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

1. **Report Summation**
 - 1.1. **Data Summation**
 - 1.2. **Conclusion**
2. **Method Summation**
 - 2.1. **Test Conditions and Methods**
 - 2.2. **Potassium chloride Reference Salt Test**
 - 2.2.1. *Pimephales promelas* data
 - 2.2.2. *Ceriodaphnia dubia* data
 - 2.3. **Literature Cited**
3. **Raw Data Bench Sheets**
 - 3.1. **Initial observations (page 1)**
 - 3.2. **Zero hour Observations (page 1)**
 - 3.3. **Twenty-four (24) hour Observations (page 1)**
 - 3.4. **Forty-eight (48) hour Observations (page 1)**
 - 3.5. **Survival Data Table (page 2)**
 - 3.6. **Test Comments (page 3)**
4. **Chain of Custody**
5. **MO DNR "Whole Effluent Toxicity (WET) Test Report (Form 780-1899)**

Environmental Analysis South, Inc.

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1416021
June 13, 2012 through June 15, 2012

1. REPORT SUMMATION:

1.1. Single Dilution Data Summation

	<i>Pimephales promelas</i> Acute Toxicity Test	<i>Ceriodaphnia dubia</i> Acute Toxicity Test
Survival in the Effluent at 48 Hours	100%	100%
Survival in the Reconstituted Control (RC) at 48 Hours	100%	100%
Survival in the Upstream Control (UC) at 48 Hours	N/A	N/A
Statistical Results Comparing the Survival Data of the Effluent with the Control (arc sine square root transformation)	No Significant Difference at alpha = 0.05 PASS	No Significant Difference at alpha = 0.05 PASS

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

Conclusion: The mortality observed with both species was determined not to be significantly different than that observed in the control sample.

Based on these results the outfall passed the whole effluent toxicity test with both indicator species.

Approved by _____


Sara C. Shields, Chemist

Environmental Analysis South, Inc.

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1416021
June 13, 2012 through June 15, 2012

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

	<i>Ceriodaphnia dubia</i> :	<i>Pimephales promelas</i> :
Test duration:	48 hours	48 hours
Temperature:	24 - 26 degree Celsius	24 - 26 degree Celsius
Light quality:	Ambient laboratory illumination	Ambient laboratory illumination
Photoperiod:	16 hour light, 8 hours dark	16 hour light, 8 hours dark
Control Water:	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
Dilution Water:	Upstream Water - If unavailable or toxic, then control water will be used.	Upstream Water - If unavailable or toxic, then control water will be used.
Size of test vessel:	30 milliliters	250 milliliters
Volume of test solution:	15 milliliters	200 milliliters
Age of test organisms:	<24 hours	1 -14 days (all same age)
Number of organisms/test vessel:	5	10
Number of replicates/concentration:	4	4
Number of organisms/concentration:	20	40 for a single dilution test and 20 for a multiple dilution test
Feeding regime:	None (fed prior to test)	None (fed prior to test)
Aeration:	None	None
Test acceptability criterion:	90% or greater survival in controls	90% or greater survival in controls

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from C-K Associates Inc. located in Baton Rouge, Louisiana and shipped overnight for use in the whole effluent toxicity test.

Environmental Analysis South, Inc.

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
OUTFALL 001 (24 hour composite) AEC = 100%
MO-0101567
EAS LOG# 1416021
June 13, 2012 through June 15, 2012

2.2. REFERENCE TOXICITY TEST:

Environmental Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on June 6, 2012 using KCL Lot #41713. Following are the results:

2.2.1. *P. promelas* - 48 hr. Acute Test – LC₅₀ = 0.919 g/l 95%CI (0.724-1.113 g/l)
EAS %CV = 10.6%

National Warning Limits (75th percentile) = 19%CV
National Control Limits (90th percentile) = 33%CV

2.2.2. *C. dubia* - 48 hr. Acute Test – LC₅₀ = 0.486 g/l 95%CI (0.350-0.622g/l)
EAS %CV = 14.0%

National Warning Limits (75th percentile) = 29%CV
National Control Limits (90th percentile) = 34%CV

2.3. LITERATURE CITED:

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 5th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2)*. June 2000. EPA 833-R-00-003.

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

CLIENT NAME: Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite
NPDES NUMBER: MO-0101567

TYPE OF METHOD: single dilution, 48 hr WET, PP & CD, AEC=100%
DATE & TIME OF COLLECTION: 06/11/12 0730 hrs - 06/12/12 0730 hrs by Denny Vinson
DATE & TIME OF SUBMISSION: 06/13/12 1020 hrs by UPS

Upstream: Not Available

INITIAL OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	INT EFFL	INT UC	INT RC					
LOG NUMBER / ID NUMBER						1416021		RC4039					
pH - SU	06/13/12	1030 hrs	SCS	SB114 (8.8-9.2)	9.13	8.26		7.99					
TEMPERATURE °C RECEIVED	06/13/12	1030 hrs	SCS	EAS 106		2		24					
SPECIFIC CONDUCTANCE umhos	06/13/12	1030 hrs	SCS	ERA506-0814(452-505)	495	777		226					
HARDNESS - ppm	06/13/12	1030 hrs	SCS	ERA P170-507(107-134)	120	300		80					
CHLORINE - ppm	06/13/12	1030 hrs	SCS	tap water	+	<0.04		<0.04					
DISSOLVED OXYGEN - ppm	06/13/12	1030 hrs	SCS	cal@840		9.74		9.15					
TOTAL ALKALINITY - ppm	06/13/12	1500 hrs	SCS	ERA 203-506(105-124)	114.0	206		68.1					
INITIAL AMMONIA - ppm	06/14/12	1500 hrs	JPC	EAS #2446 (8-12)	9.81	0.146		<0.05					
TOTAL DISSOLVED SOLIDS -ppm													
0 HOUR OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.50%	6.25%	X %AEC
pH - SU	06/13/12	1100 hrs	SCS	SB114 (8.8-9.2)	9.13	7.65		7.13					
TEMPERATURE °C	06/13/12	1100 hrs	SCS	EAS 106		23.8		23.9					
SPECIFIC CONDUCTANCE umhos	06/13/12	1100 hrs	SCS	ERA506-0814(452-505)	495	254		803					
DISSOLVED OXYGEN - ppm	06/13/12	1100 hrs	SCS	cal@840		9.7		9.5					

24 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.50%	6.25%	X %AEC
pH - SU	06/14/12	1100 hrs	SCS	SB114 (8.8-9.2)	8.9	7.79		8.01					
TEMPERATURE °C	06/14/12	1100 hrs	SCS	EAS 106		25.0		25.0					
SPECIFIC CONDUCTANCE umhos	06/14/12	1100 hrs	SCS	ERA506-0814(452-505)	491	290		855					
DISSOLVED OXYGEN - ppm	06/14/12	1100 hrs	SCS	cal@840		8.87		7.6					
48 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.50%	6.25%	X %AEC
pH - SU	06/15/12	1100 hrs	SCS	SB114 (8.8-9.2)	8.86	8.15		7.82					
TEMPERATURE °C	06/15/12	1100 hrs	SCS	EAS 106		24.9		24.9					
SPECIFIC CONDUCTANCE umhos	06/15/12	1100 hrs	SCS	ERA506-0814(452-505)	498	241		876					
DISSOLVED OXYGEN - ppm	06/15/12	1100 hrs	SCS	cal@840		8.1		7.9					
FINAL AMMONIA - ppm				EAS #2375 (8-12)									

24 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.50%	6.25%	X %AEC
pH - SU	06/14/12	1100 hrs	SCS	SB114 (8.8-9.2)	8.9	7.93		8.14					
TEMPERATURE °C	06/14/12	1100 hrs	SCS	EAS 106		25.0		25.0					
SPECIFIC CONDUCTANCE umhos	06/14/12	1100 hrs	SCS	ERA506-0814(452-505)	491	231		769					
DISSOLVED OXYGEN - ppm	06/14/12	1100 hrs	SCS	cal@840		8.2		8.6					
48 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE <th>RC</th> <th>UC</th> <th>100%</th> <th>50%</th> <th>25%</th> <th>12.50%</th> <th>6.25%</th> <th>X %AEC</th>	RC	UC	100%	50%	25%	12.50%	6.25%	X %AEC
pH - SU	06/15/12	1100 hrs	SCS	SB114 (8.8-9.2)	8.86	8.12		7.88					
TEMPERATURE °C	06/15/12	1100 hrs	SCS	EAS 106		24.9		24.9					
SPECIFIC CONDUCTANCE umhos	06/15/12	1100 hrs	SCS	ERA506-0814(452-505)	498	254		758					
DISSOLVED OXYGEN - ppm	06/15/12	1100 hrs	SCS	cal@840		8.9		9.0					
FINAL AMMONIA - ppm				EAS #2375 (8-12)									

Approved by: *[Signature]*

Date: *6/15/12*

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite EAS LOG# 1416021

Date Test Began: Time Test Began: Analyst 1:
 Date Test Finished: Time Test Finished: Analyst 2:
 Analyst 3:

P. promelas (PP) AGE: days HATCH NUMBER:

PERIOD	RC	UC	100%	50%	25%	12.50%	6.25%	X% AEC
0 HR-PP	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
24 HR-PP	10,10,10,10		10,10,10,10					
48 HR-PP	10,10,10,10		10,10,10,10					

Ceriodaphnia dubia (CD) AGE: hours HATCH NUMBER:

PERIOD	RC	UC	100%	50%	25%	12.50%	6.25%	X% AEC
0 HR-CD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
24 HR-CD	5.5.5.5		5.5.5.5					
48 HR-CD	5.5.5.5		5.5.5.5					

Approved by: 

Date: *06/18/2012*

Single
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ENVIRONMENTAL ANALYSIS SOUTH, INC.

4000 East Jackson Blvd
Jackson, MO 63755
Phone: (573) 204-8817 Fax: (573) 204-8818



117714

WHOLE EFFLUENT TOXICITY TESTING CHAIN OF CUSTODY

CLIENT: City of Sedalia Sedalia Southeast Wastewater Treatment Plant
NPDES PERMIT NUMBER: MO-0101567

EFFLUENT NAME: outfall 001 GRAB 24 HR COMPOSITE
(LEGAL NAME)

COLLECTION DATA: START DATE: 6-11-12 START TIME: 7:30

FINISH DATE: 6-12-12 FINISH TIME: 7:30

UPSTREAM NAME: NA (GRAB SAMPLE)
(LEGAL NAME)

COLLECTION DATA: DATE: 6-12-12 TIME: 7:30 AM

SAMPLER NAME: DENNY VINSO CARRIER: aps
(PRINT NAME)

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:

- Sampling & holding time errors (Will results in a setup charge of \$100 to the client)
- Commercial carrier delivery problems or errors (Will results in a setup charge of \$100 to the client)
- Problems with health or delivery of test organisms by vendor (No setup charge to client)

SAMPLER CHECK LIST

NO HEADSPACE IN BOTTLES

~~ALL SAMPLES BY NEXT DAY CARRIER OR DELIVER TO LAB ON~~ 6/13/12

SAMPLES TO BE HAND DELIVERED TO LABORATORY SAME DAY AS TEST SETUP

SUFFICIENT ICE TO COOL SAMPLES TO A RANGE OF 0 - 6°C WHEN SHIPPING OVERNIGHT

RELINQUISHED BY: [Signature] DATE: 6-12-12 TIME: 8:20 am

LABORATORY USE ONLY

EFFLUENT LOG NUMBER: 1416021

RECEIVED TEMPERATURE: 2 °C THERMOMETER ASSIGNED NUMBER: _____

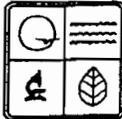
HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

UPSTREAM LOG NUMBER: _____

RECEIVED TEMPERATURE: _____ °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

RECEIVED BY: [Signature] DATE: 6/13/12 TIME: 10:20 AM



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM - P.O. BOX 176, JEFFERSON CITY MO, 65102
WHOLE EFFLUENT TOXICITY (WET) TEST REPORT
 (TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

PART A - TO BE COMPLETED IN FULL BY PERMITTEE

FACILITY NAME Sedalia Southeast Wastewater Treatment Plant		DATE & TIME COLLECTED EFFLUENT 06/11/12 0730-06/12/12 0730 UPSTREAM not available	
PERMIT NUMBER MO-0101567		PERMIT OUTFALL NUMBER Outfall # 001	
COLLECTOR'S NAME Denny Vinson			
RECEIVING STREAM COLLECTION SITE AND DESCRIPTION Not available			
PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC) 100%		EFFLUENT SAMPLE TYPE (CHECK ONE) <input checked="" type="checkbox"/> 24HR COMPOSITE <input type="checkbox"/> GRAB <input type="checkbox"/> OTHER	
SAMPLE NUMBER EFFLUENT 1416021 UPSTREAM not available		UPSTREAM SAMPLE TYPE (CHECK ONE) <input type="checkbox"/> 24HR COMPOSITE <input type="checkbox"/> GRAB <input checked="" type="checkbox"/> OTHER not available	
PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR CHLORINE _____ mg/L		PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR AMMONIA _____ mg/L	

PART B - TO BE COMPLETED IN FULL BY PERFORMING LABORATORY

PERFORMING LABORATORY Environmental Analysis South, Inc.		TEST TYPE Acute Static Non renewal Test Single Dilution	
FINAL REPORT NUMBER MO-0101567		TEST DURATION 48 hour	
DATE OF LAST REFERENCE TOXICANT TESTING June 6, 2012		TEST METHOD Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms	
DATE AND TIME SAMPLES RECEIVED AT LABORATORY 06/13/12 1020 hrs by UPS		TEST START DATE AND TIME 06/13/12 1100 hrs	TEST END DATE AND TIME 06/15/12 1100 hrs
SAMPLE DECHLORINATED PRIOR TO ANALYSIS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____		TEST ORGANISM #1 AND AGE Pimephales promelas 8 days	TEST ORGANISM #2 AND AGE Ceriodaphnia dubia < 24 hours
SAMPLE FILTERED ¹ PRIOR TO ANALYSIS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____		90% OR GREATER SURVIVAL IN SYNTHETIC CONTROL? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	DILUTION WATER USED TO ACHIEVE AEC none
FILTER MESH SIEVE SIZE? None		EFFLUENT ORGANISM #1 % MORTALITY AT AEC 0 %	EFFLUENT ORGANISM #2 % MORTALITY AT AEC 0 %
SAMPLE AERATED DURING TESTING? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		UPSTREAM ORGANISM #1 % MORTALITY RC=0 %	UPSTREAM ORGANISM #2 % MORTALITY RC=0 %
pH ADJUSTED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____		TEST RESULT AT AEC FOR ORGANISM #1 <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL	TEST RESULT AT AEC FOR ORGANISM #2 <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% EFFLUENT SAMPLE

PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	2	SM18 2550B stored at 4 degree C until test setup	06/13/12 1030 hrs
pH Standard Units	8.26	SM18 4500-H B	06/13/12 1030 hrs
Conductance µMohs	777	SM18 2510B	06/13/12 1030 hrs
Dissolved Oxygen mg/L	9.74	SM18 4500-O G	06/13/12 1030 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-Cl G	06/13/12 1030 hrs
Unionized Ammonia mg/L	0.146x0.10=0.015	SM18 4500-NH3 F @ 25 degree C	06/14/12 1500 hrs
*Total Alkalinity mg/L	206	SM18 2320B	06/13/12 1500 hrs
*Total Hardness mg/L	300	SM18 2340 C	06/13/12 1030 hrs

*Recommended by USEPA guidance, not a required analysis.

¹ Samples shall only be filtered if indigenous organisms are present that may be confused with, or attack, the test organisms.
² Filters shall have a sieve size of 60 microns or greater.

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% UPSTREAM SAMPLE ³			
PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	24	SM18 2550B stored at 4 degree C until test setup	06/13/12 1030 hrs
pH Standard Units	7.99	SM18 4500-H B	06/13/12 1030 hrs
Conductance µMohs	226	SM18 2510B	06/13/12 1030 hrs
Dissolved Oxygen mg/L	9.15	SM18 4500-O G	06/13/12 1030 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-Cl G	06/13/12 1030 hrs
Unionized Ammonia mg/L	<0.05x0.05<0.010	SM18 4500-NH3 F @ 25 degree C	06/14/12 1500 hrs
*Total Alkalinity mg/L	68.1	SM18 2320B	06/13/12 1500 hrs
*Total Hardness mg/L	80	SM18 2340 C	06/13/12 1030 hrs

*Recommended by USEPA guidance, not a required analysis.

PRELIMINARY TEST ACCEPTABILITY MATRIX (FOR USE BY PERMITTEE IN DETERMINING TEST VALIDITY)
PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC): As indicated on permit. Test is invalid otherwise.
EFFLUENT SAMPLE TYPE: As indicated on permit. Test is invalid otherwise.
TEST TYPE: Acute Static Non-Renewal Test or other as indicated on permit. Test is invalid otherwise.
TEST DURATION: Forty-eight (48) hours or as indicated on permit. Test is invalid otherwise.
TEST ORGANISMS: As indicated on permit. Test is invalid otherwise.
DILUTION WATER USED TO ACHIEVE AEC: Upstream receiving water required if available.
TEST METHOD: The only acceptable method is the <i>most current edition</i> of <u>Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms</u> , or other as specifically assigned by EPA for determining NPDES compliance. Test is invalid otherwise.
TEST START DATE & TIME: Unless otherwise specified in writing by EPA, if >36 hours lapse between collection and initiation, test is invalid.
FILTER MESH SIEVE SIZE: Unless otherwise specified in writing by EPA, if sieve size is smaller than 60 microns, test is invalid.
90% OR GREATER SURVIVAL IN LABORATORY CONTROL(S) (Y/N): If NO, test is invalid.

PARAMETER	RESULT	NOTES	WHEN ANALYZED
Temperature °C	0 - 6	Unless received by the laboratory on the same day as collected, values outside this range invalidate the test.	Upon receipt

³ Where no upstream control is available, enter results from laboratory or synthetic control.

Question 60.8 – Sedalia Southeast WWTP SIU Incident Reports

December 11, 2011

Facts:

Interstate Studio reported violations of its Industrial Wastewater Discharge Permit (#0415) for excess silver discharges on November 1, November 2, and November 3, 2011.

The City of Sedalia Southeast Wastewater Treatment Plant (WWTP) reported permit violations for exceeding the National Pollution Discharge Elimination System (NPDES) permit (permit#: MO-0101567) for the maximum daily limit for silver. These violations occurred on November 1, November 9, November 21, November 29, and December 1, 2011.

On November 14, 2011 Interstate Studio changed the metal accumulating filters used in the silver removal process of their industrial pre-treatment process.

Interstate Studio was made aware of the Southeast WWTP permit violations on November 16, 2011.

On November 22, 2011 Interstate Studio reported a short circuit in their industrial pre-treatment process

On November 29, 2011; a site visit to Interstate was made by City of Sedalia staff to find out what was going on.

On December 1, 2012, the City of Sedalia Southeast WWTP collected a split sample with the Missouri Department of Natural Resources (MDNR) and tested for all the constituents listed on the NPDES permit. Of particular interest; Biochemical Oxygen Demand (BOD), Ammonia as Nitrogen, and Silver values were close to or above maximum daily limits. Information gathered from these tests indicate that the treatment process (carbonaceous and nitrogenous removal processes) at the Southeast WWTP has been significantly disrupted by the addition of silver from Interstate Studio.

On December 8, 2011 a decision was made to begin seeding the Southeast WWTP with bacteria from the activated sludge process at the City of Sedalia's Central WWTP. Without knowing how much silver was either in a free state or fixed in the sludge; staff decided that it was prudent to begin augmenting the process with fresh bacteria from a separate treatment plant. Luckily, one of the two aeration basins employed at the Southeast WWTP was undergoing maintenance and was therefore empty and unaffected by the silver discharges. The basin was just a few days away from being ready to be filled and placed back into service.

On December 9, 2011 the compost operator reported difficulty with the compost zone which was built on December 5, 2011. This compost zone was made with a significant amount of wasted sludge from the Southeast WWTP.

On December 10, 2011 a decision was made to place the aeration basin #1 at the Southeast WWTP into service with bacteria exclusively from the Central WWTP, and then isolate the aeration basin #2 which contains bacteria suspected of containing an unhealthy amount of silver.

December 6, 2011

Phil Webster
City of Sedalia Water Pollution Control
Alliance Water Resources - Local Manager
Municipal Building
200 South Osage Avenue
Sedalia, MO 65301

Aaron Bleibaum
Missouri Department of Natural Resources
Kansas City Regional Office
500 NE Colbern Rd
Lee's Summit, MO 64086-4710

Dear Mr. Bleibaum:

This letter serves as the official 5 day report regarding NPDES permit violations that occurred at the City of Sedalia Southeast Wastewater Treatment Facility; MO-0101567. The permit violation was for exceeding the maximum daily limit for Silver. The values reported:

Date	Value
November 9, 2011	0.034 mg/L
November 14, 2011	0.020 mg/L
November 21, 2011	0.041 mg/L
November 29, 2011	0.040 mg/L

The daily maximum limit for Silver is 0.008 mg/l. City of Sedalia Staff became aware of the violations after receiving reports from our contract lab showing that the Silver limit had been exceeded. Beginning in October, 2011 City of Sedalia Staff has been conducting an investigation of the Southeast collection basin for sources of high copper, silver and zinc. Staff has also contacted a permitted industry which is suspected of discharging high levels of Silver into the City' wastewater collection system. A time-line describing a series of events connected to these violations, and actions taken by City staff is attached to this letter.

If you have any question regarding this matter please give me a call at 660-619-0659.

Sincerely,

Phil Webster

c.c. Bill Beck, City of Sedalia
Dick Tuttle, Alliance Water Resources
Adria Palmer, Missouri Department of Natural Resources
John Harris, Alliance Water Resources

Metals Timeline

August:

- Cu violation (13 ug/l [limit is 20 ug/l daily maximum & 9 ug/l monthly average]); this was the second violation since April when the final limit came into effect

September:

- Cu violation (14 ug/l) – since this was the second violation in a row I decided to start an investigation in the collection system to see if we could find where the Cu was coming from
- Interstate submitted their quarterly metals analysis 0.599 mg/l Ag; local limit is 0.299 pounds per day; Interstate average flow is: 10,000 GPD so the #s discharged is probably 0.05 which is within limits (even if the flow was doubled), the limit for Interstate is 0.38 pounds per day which with a flow of 10,000 gallons = 4.55 mg/l per day – a grab sample collected from Interstate later in this timeline had a 64.6 mg/l value that would equal 5.39 # of Ag which is 14 times over the limit. The water quality standard for Silver acute toxicity at a hardness of approximately 250 mg/l is 15 ug/l

10-5-11:

- Set up samplers at two locations: the Southwest Lift Station (which catches the west side of the Southeast WWTP plants collection basin including Interstate, and the new high school); and the Influent of the Southeast WWTP. Found that we had a reasonable Cu value from the west side of the collection system and a higher than expected Cu value from the Influent at the plant; this fact showed that we would have a higher than expected Cu value coming from the east side of the collection system.

10-21-11:

- Received hard copy of lab report from contract lab on samples collected on 10-3-11 at the Southeast plant: Cu result (19 ug/l); Zn result (74 ug/l) – high Cu again and a high Zn number (over the monthly average limit)

11-1-11

- Expanded collection system investigation to three trunk lines on the east side; found higher than expected values of Cu from the west and central trunk lines (the east trunk line showed a reasonable value for Cu)
- Instructed southeast plant to collect a composite sample weekly for metals: Cu and Zn

11-3-11

- Received hard copy of lab report from contract lab on samples collected on 10-24-11 at the Southeast plant: Cu result (20 ug/l); Zn result (69 ug/l) – high Cu again

11-9-11

- Received hard copy of Southeast WWTP metals: Cu and Ag both exceeded daily maximum limits
- Instructed Southeast plant to include Ag in the metals we want the contract lab to test for on the weekly composites
- Set up sampler at Southeast plant

11-10-11

- Reported violations to DNR, City, and AWR
- Requested a retest of the results from our contract lab

11-14-11

- Received retest results from contract lab with no significant change in values
- Set up sampler at Southeast plant

11-16-11

- Contract lab gave us verbal notification of the results from samples collected on 11-9-11
- Instructed Mark Grose to send an email to Interstate alerting them of the silver violations (see attached email)

11-17-11

- Set up samplers in the collection system: two on the central (east) trunk line, and one on the west (east) trunk line; decided this time to look at Cu, Ag, and Zn

11-21-11

- Set up sampler at Southeast plant

11-22-11

- Set up samplers on the west (east) trunk line: instructed John Harris to instruct Mark Grose to collect a grab from Interstate

11-23-11

- Received verbal results for the samples collected on 11-14-11

11-28-11

- Set up sampler at Southeast plant

11-29-11

- Received verbal results for the samples collected on 11-21-11 & 11-22-11
- Held meeting with WPC staff
- Made site visit to Interstate
- Sent email to City and AWR outlining the situation – Interstate had been violating their discharge permit by discharging high silver concentrations; this was the most likely reason for NPDES permit violations at the Southeast WWT plant.

11-30-11

- Set up sampler at Interstate
- DNR set up sampler at Southeast WWT plant

12-1-11

- Received hard copy of the lab results for 11-14-11 and 11-21-11
- Attempted (John Harris left a message) to notified DNR of daily maximum limit violations for Ag

12-2-11

- Made verbal contact with DNR about Ag violations
- Received hard copy of the lab results for 11-9-11

12-5-11

- Received verbal results from samples collected on 11-29-11 at the SE plant: Cu = 18 ug/l; Ag = 40 ug/l; & Zn = 70 ug/l
- Received verbal results from split with DNR on 12-1-11: Cu=14 ug/l; Ag=20 ug/l; Zn=66 ug/l

12-6-11

- Received verbal results for composite samples collected at Interstate on 11-29-11 (1.25 mg/l); 11-30-11 (0.798 mg/l); and 12-1-11 (0.860 mg/l) – all values are below Interstates discharge permit limit
- Notified Interstate that it needs to collect a composite sample on 12-7-11, 12-14-11, and 12-21-11 and have these tested for Silver
- WPC staff will collect grab samples from two locations downstream from the SE plant 001 structure and have them tested for Silver
- WPC staff will also collect samples from compost zones built since the last week of October 2011 and have them tested for Silver

November 14, 2011

Phil Webster
City of Sedalia Water Pollution Control
Alliance Water Resources - Local Manager
Municipal Building
200 South Osage Avenue
Sedalia, MO 65301

Aaron Bleibaum
Missouri Department of Natural Resources
Kansas City Regional Office
500 NE Colbern Rd
Lee's Summit, MO 64086-4710

Dear Mr. Bleibaum:

This letter serves as the official 5 day report regarding an NPDES permit violation that occurred at the City of Sedalia Southeast Wastewater Treatment Facility; MO-0101567. The permit violation was for exceeding the maximum daily limit for silver. The value reported was 0.050 mg/l. The daily maximum is 0.008 mg/l. Staff became aware of the violation after receiving a report from our contract lab showing that on November 1, 2011 the silver limit had been exceeded.

Staff is currently conducting an investigation of the Southeast collection basin for sources of high copper. This study will be expanded to include silver. Staff is also working with a local industry that is currently permitted with silver limits to determine if that industry could be the source of the violation.

If you have any question regarding this matter please give me a call at 660-619-0659.

Sincerely,

Phil Webster

c.c. Bill Beck, City of Sedalia
Dick Tuttle, Alliance Water Resources
Adria Palmer, Missouri Department of Natural Resources

Statements based on Facts:

From November 1, 2011 to November 14, 2011; and then again on November 22, 2011 there was a high probability that there was silver discharges from Interstate Studio that exceeded their Industrial Wastewater Discharge Permit limits for the discharge of silver.

Throughout this period of time there were mitigating issues that affected the process of getting the situation solved in a more expedient fashion: first, significant delays in getting lab data that showed the silver violations; second, the fact that Interstate Studio had very recently submitted silver results that were well under the limit; and third, City of Sedalia staff were in the process of chasing source(s) of copper and zinc contributions to the Southeast WWTP collection system and these sources were located on the opposite side of the collection system from where Interstate Studio discharges its wastewater.

Silver was not only discharged in the treated effluent at permit violation levels, but also accumulated in the micro-biological mass which is critical to the wastewater treatment process at the Southeast WWTP. The accumulation reached a critical level that inhibited and/or destroyed the micro-biological ability to remove carbonaceous and nitrogenous waste in the treatment process, which placed the WWTP at risk of multiple NPDES permit violations.

There was one reporting problem: the five day report for the last set of silver violations was delayed 3 days due to a breakdown in communications. The report, which was due to be postmarked on November 6, 2011, was faxed to the MDNR on December 9, 2011. (If the 5 day notification is counted by using business days the report was submitted on time).

Narrative

The following narrative will explain the events which have caused the City of Sedalia to report a series of maximum daily limit violations for silver at the Southeast WWTP. To begin with the Southeast WWTP had been experiencing monthly violations for copper which were reported in April, August, September, and October 2011. City staff anticipated that copper was going to be an issue based on historic records for copper and the fact that the copper limit was based on the default hardness value and therefore was not representative of actual hardness conditions in the Southeast WWTP discharge. Despite this fact, staff decided to look for the potential source of copper in the collection system to see if it could be found and ultimately reduced or removed. The investigation was based on collecting samples at the main trunk mains that conveyed sewage to the Southeast WWTP and through a process of elimination (using copper values); work upstream in the collection system until the source was found. During this investigation staff was notified that not only copper, but also zinc became an issue. The investigation then expanded to include zinc. At this time the west side of the collection system was ruled out due to low copper values. The west side of the collection system is where Interstate Studio discharges. Staff

began focusing its attention to the east side of the collection system where unusually high levels of copper were being detected, and which has the hospital discharge (which was just recently expanded). Therefore, the hospital and an associated group of medical clinics, labs, etc... were thought to be the potential source of the copper and zinc problems. Staff then became aware of the silver violation at the Southeast WWTP. Since Interstate had recently sent in a clean quarterly report, we were not ready to put them on our list of suspects; but a few days later (November 16, 2011) when we received verbal notification of the second silver violation, Interstate was contacted to alert them of the problem. What ensued from that point was more notifications that the silver limit was being violated and that Interstate discovered a problem with their treatment process and received proof of silver violations in their discharge. During this time Interstate became aware that they had violated the silver limit on November 1, November 2, and November 3, 2011. Interstate staff gave the City notice that these violations had occurred within 24 hours; and at that time had discussed a plan of action with the City's Pre-treatment Coordinator. Interstate later reported that on November 14, 2011, the metal accumulating filters (a key unit in the silver removal process) were changed which should have corrected the problem with removing silver. A few days later though, on November 22, 2011 Interstate staff discovered a short circuit of their treatment process which added yet another discharge of silver which most likely exceeded their silver limit. City staff made a site visit to Interstate Studio on November 29, 2011 to ascertain what was going on with the Interstate pretreatment process. What prompted this visit was that a result (learned in the morning on November 29, 2011) from a grab sample that was collected by City staff from the Interstate discharge was extremely high in silver. During the site visit City personnel learned that Interstate Studio had essentially double their production for a period of four weeks prior to the beginning of the events being described in this narrative. While staff was busy trying to piece the information on the silver violations together, MDNR staff set up a sample at the Southeast WWTP 001 discharge. City staff split the sample with the MDNR and within a few days became aware that the Southeast WWTP was in trouble. Evidence from observation and key treatment parameters indicate the Southeast WWTP lost most of its nitrification process and some of its carbonaceous removal process. City staff (with the assistance of a few engineers who have experience with this type of problem) then began planning on how to jump start the treatment process with a seeding strategy. Unfortunately, it is cold and in any process driven by bacteria recovery may be slow.

An NOV letter (for Interstate Studio) was sent to City Administrative staff for review on December 9, 2011

Industrial User Inspection Checklist

Date: 12/16/11

Time: 8:30 a.m.

Industry Name: Inter-State Studio & Publishing Company

Location Address:	3500 Snyder Ave.	Mailing Address:	P.O. Box 1177
	Sedalia, MO 65301		Sedalia, MO 65301

Industry Contacts (w/titles):

Contact	Title	Fax:	660-826-0029
Jason Culp	Maintenance / Facility Manager	Phone:	660-826-1764 ext. 4121
Branden Boise	Operations Director	Phone:	660-826-1764 ext. 4175

Products: School Photography, Service Items, Yearbooks, Calendars, Books (hardback/softback), Paper			
Raw Materials: Photographic: RA4 Kodak Paper Chemistry, Kodak Photographic Paper (8", 10", 50"), Service Items Lithographic: Aluminum Printing Plates (including processing material), Conventional & Digital Printing Press Inks & Toners, Adhesive, Paper (sheet & roll) General: Cardboard Boxes, Shrink Wrap			
Manufacturing Processes: Product Development, Product Printing, Product Imaging, Product Fabrication, Product Packaging, Product Shipment			
Planned Changes to Plant: None at this time – Remodeled Photo Operations Department past year			
Applicable Categorical Standards:		Pollutants of Concern: Silver	
No. of employees:	No. of shifts per day:	Days worked per week:	Is production seasonal?
Peak: 531 (October) Non Peak: 265 (July) Average: 398	Spring: 2 Fall: 3 Maintenance: 3 Time span of 2 & 3 shift production varies	5 average 260 days 6 & 7 days per week throughout year also	Yes
Employee showers (Y/N): Yes (2)		Scheduled shutdowns: Holidays (i.e. New Years, Memorial Day, Independence Day, Labor Day, Thanks giving, Christmas)	
Number of Outfalls		Sampling Location(s): 4" PVC Manhole North East of Main Facility	
Total: 2		1 Regulated Regulated: Second outfall is domestic effluent only-no production effluent is discharged	

Persons Present During Inspection

Industrial User Inspection Checklist

Industry: Jason Culp, Inter-State Studio & Publishing Company	POTW: Mark Grose, City of Sedalia Missouri
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II. WATER BALANCE

1. Complete the following table based on current water consumption.

Source	Average Flow	Metered
Water Company	Jan. 2011-Nov. 2011: 2,983,309 gallons Average over 260 days: 11,474 gallons (peak production averaged over lower production)	Yes
Private Well	N/A	
Total	<i>2,764,055 gallon calculated</i>	

2. What are the water uses within the plant? List all processes that use water when completing the table below. Attach a copy of the Plant's process schematic and show the locations from which wastewaters are generated.

Note: See Attachment II-1-Water Meter Picture, II-2-Facility Process Schematic, II-3-Facility Layout

Waste Water Generating Process	Average Flow	Batch of Containers	Batch Frequency	Measured Estimated	Treated (Y/N)
A. Photographic Paper Processing – Colex Note: See Attachment II-2-A-Colex Picture	Ttl. Gal./hr. usage: 1 gpm x 60 minutes = 60 gph x 221 rolls of paper = 13,260 Ttl. Gal. Used / 260 days / year = 51 gallons/day 13,260 gallons annual average	Batch	Daily	Calculated	Yes – In House
B. Omitted					
C. Photographic Paper Processing – GPE (2 machines) Note: See Attachment II-2-C-GPE Picture	Ttl. Gal./hr usage: 350 gallons x 16 hours (avg. prod.) = 5,600 gallons/day 1,456,000 gallons annual average	Batch	Daily	Calculated	Yes – In House
D. Aluminum Printing Plate Processing –	1 gallon/plate x 46,200 plates = 46,200	Batch	Daily	Calculated	No (not required)

Industrial User Inspection Checklist

Flow Measurement	Can flows be measured at sampling location? No
Are flows measured at sampling location? No	Measuring device(s): Sampling Device; Isco Sampler
Sample Analysis	Pollutants analyzed in-house: No
Do in-house analysis methods conform to 40 CFR Part 136? NA	
Do Contract labs methods conform to 40 CFR Part 136? Yes: Engineering Surveys & Services 1113 Fay Street Columbia MO 65201 573-449-2646	

Comments:

See notes on last page

VI. WASTEWATER TREATMENT

7. If the industry treats its process wastewater's before discharge to the POTW, complete the following:

Treatment Type: Metallic Replacement		Date Originally Installed: 1980's; updated late 1990's
Design Flow:	1. Tailings/Waste Water: 500 mill./min. max. 2. Bleach: 200 mill./min. max.	Treatment – batch or continuous Continuous
Actual Flow:	1. Tailings/Waste Water: 300 mill./min. 2. Bleach: 150 mill./min.	Treatment – batch or continuous Continuous
Operation		Reagents: (include usage rates, if known) NA
Hours/Day	Days/Week	
24	7	
FTE's needed to Operate		
Clarifier volume:		Effluent filtration media: (if applicable)
Description of overall condition:		
1. Tailings, Wash Water: Four banks of three (Mark 15 Metallic Replacement Cartridges)		
2. Bleach: Two banks of three (Mark 15 Metallic Replacement Cartridges)		

8. Has the facility experienced any operational / upset problems since the last inspection?
Yes – Silver Discharge greater than permit level. See Letter dated 12/14/11 to Mark Grose

Note: See Attachment VI-1-Tailings, Attachment VI-2-Bleach, and Attachment VI-3-Metallic Replacement System Accumulation Tanks w/cylinders; Pictures of Metallic Replacement Systems

South East Plant - Hardness Data as CaCO3

Date	Measured	Duplicate	Average	Creek	Date	Measured	Duplicate	Average
	mg/L as CaCO3	mg/L as CaCO3	mg/L as CaCO3	mg/L as CaCO3		mg/L as CaCO3	mg/L as CaCO3	mg/L as CaCO3
4/13/2010					3/8/2011	254	250	252
4/14/2010	322		322		3/10/2011			
4/21/2010	324		324		3/16/2011	243		243
5/12/2010	264		264		3/17/2011			
5/19/2010	265		265		3/22/2011			
5/27/2010	259		259		3/23/2011	272		272
6/2/2010	246		246	242	3/24/2011			
6/9/2010	247		247		3/29/2011	294		294
6/16/2010	255		255		3/31/2011			
6/23/2010	257		257		4/12/2001	282		282
7/1/2010	260		260		4/14/2001			
7/14/2010	284	256	270		4/19/2011	285		285
8/4/2010	256	257	256.5		4/21/2011			
9/9/2010	308	262	285		4/26/2011	244		244
9/15/2010	264	264	264		4/28/2011			
9/22/2010	262	270	266		4/29/2011			
10/5/2010	284		284		5/3/2011			
10/6/2010	308		308		5/4/2011	299		299
10/7/2010	257		257		5/6/2011			
10/15/2010	270		270		5/10/2011			
10/2/2010	262		262		5/11/2011	289		289
11/3/2010	245		245		5/13/2011			
12/8/2010	270		270		5/17/2011			
12/15/2010	274	297	285.5		5/18/2011	282		282
12/21/2010	257	266	261.5		5/19/2011			
12/28/2010	282		282		5/25/2011			
1/4/2011	278	284	281		5/31/2011			
1/6/2011					6/1/2011	286		286
1/12/2011	289	284	286.5		6/3/2011			
1/19/2011	298	306	302		6/7/2011			
1/25/2011	296	292	294		6/8/2011	286		286
2/1/2011	307	304	305.5		6/9/2011			
2/8/2011	371	373	372	292	6/14/2011			
2/17/2011					6/15/2011	257		257
2/18/2011					6/21/2011			
2/22/2011	288	255	271.5		6/22/2011	259		259
2/24/2011					6/24/2011			
3/1/2011	253	251	252		6/28/2011			
3/2/2011					6/30/2011	267		267
3/3/2011					7/1/2011			