

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, 92<sup>nd</sup> Congress) as amended,

Permit No.: MO-0136174

Owner: Whitewater / Allenville Combined Water and Sewer Cooperative  
Owner's Address: P.O. Box 108, Jackson, MO 63755

Continuing Authority: Same as above  
Continuing Authority's Address: Same as above

Facility Name: Whitewater / Allenville Wastewater Treatment Facility  
Facility Address: Penney Street, Allenville, MO 63740

Legal Description: NW ¼, NW ¼, Sec. 05, T29N, R12E, Cape Girardeau County  
UTM: X=788536 Y=4123710

Receiving Stream: Headwater Diversion Channel (P)  
First Classified Stream and ID: Headwater Diversion Channel (P) (2196)  
USGS Basin & Sub-watershed No.: (07140107-0604)

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

**FACILITY DESCRIPTION**

Outfall #001 – POTW – SIC #4952 - **Class C Operator Required**  
Recirculating Filter / UV Disinfection / Sludge Disposed by contract hauler  
Design population equivalent is 304.  
Design flow is 21,300 gallons per day.  
Design sludge production is 4.6 dry tons/year.

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

November 27, 2013  
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

March 31, 2018  
Expiration Date

John Madros, Director, Water Protection Program

A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 2 of 5	
					PERMIT NUMBER MO-0136174	
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. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	once/weekday**	24 hr. total
Biochemical Oxygen Demand <sub>5</sub> ****	mg/L		45	30	once/month	grab
Total Suspended Solids ****	mg/L		45	30	once/month	grab
pH – Units	SU	***		***	once/month	grab
Ammonia as N	mg/L	*		*	once/month	grab
Temperature	°C	*		*	once/month	grab
Escherichia Coliform (E. Coli) (Note 1)	#/100 ml		630	126	once/month	grab
Oil & Grease	mg/L	15		10	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>January 28, 2014</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, &amp; III</u> STANDARD CONDITIONS DATED <u>November 1, 2013 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- \* Monitoring requirement only.
- \*\* Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.
- \*\*\* pH is measured in pH standard units and is not to be averaged. The pH is to be maintained in the range 6.5–9.0 pH units.
- \*\*\*\* This facility is required to meet a removal efficiency of 85% or more. Influent and effluent samples used to determine percent removal shall be taken the same day.

Note 1 - Final limitations and monitoring requirements for Escherichia coliform (E. coli) are applicable only during the recreational season from April 1 through October 31. The monthly average limit for E. Coli shall be 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).

<b>C. FINAL INFLUENT MONITORING REQUIREMENTS</b>		PAGE NUMBER 3 of 5	
		PERMIT NUMBER MO-0136174	
The facility is required to meet a removal efficiency of 85% or more. The monitoring requirements shall become effective upon issuance and remain in effect until expiration. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:			
SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Influent</u> Biochemical Oxygen Demand <sub>5</sub>	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>January 28, 2014</u> .			

\*\*\*\* This facility is required to meet a removal efficiency of 85% or more. Influent and effluent samples used to determine percent removal shall be taken the same day.

#### D. SPECIAL CONDITIONS

1. This permit establishes final ammonia limitations based on Missouri's current Water Quality Standard. On August 22, 2013, the U.S. Environmental Protection Agency (EPA) published a notice in the Federal Register announcing of the final national recommended ambient water quality criteria for protection of aquatic life from the effects of ammonia in freshwater. The EPA's guidance, Final Aquatic Life Ambient Water Quality Criteria for Ammonia – Fresh Water 2013, is not a rule, nor automatically part of a state's water quality standards. States must adopt new ammonia criteria consistent with EPA's published ammonia criteria into their water quality standards that protect the designated uses of the water bodies. The Department of Natural Resources intends to adopt the new ammonia criteria during the next water quality standards triennial review. Also, refer to Section V of this permit's factsheet for further information including estimated future effluent limits for this facility. It is recommended the permittee view the Department's 2013 EPA criteria Factsheet located at <http://dnr.mo.gov/pubs/pub2481.pdf>.
2. 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.
3. All outfalls must be clearly marked in the field.
4. Permittee will cease discharge by connection to area-wide wastewater treatment system within 90 days of notice of its availability.
5. Changes in Discharges of Toxic Substances

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

  - (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
    - (1) One hundred micrograms per liter (100 µg/L);
    - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
    - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
    - (4) The level established in Part A of the permit by the Director.
  - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
6. Report as no-discharge when a discharge does not occur during the report period.

D. SPECIAL CONDITIONS (continued)

7. Water Quality Standards

- (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
  - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
    - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
    - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
    - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
    - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
    - (5) There shall be no significant human health hazard from incidental contact with the water;
    - (6) There shall be no acute toxicity to livestock or wildlife watering;
    - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
    - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.
8. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).
  9. 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.
  10. The permittee shall submit a report annually in January to the Southeast 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.
  11. 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 Southeast Regional Office.
  12. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.
  13. At least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain closed except when temporarily opened by; the permittee to access the facility, perform operational monitoring, sampling, maintenance, mowing, or for inspections by the Department. The gate shall be closed and locked when the facility is not staffed.
  14. 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.
  15. 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.
  16. An all-weather access road shall be provided to the treatment facility.

D. SPECIAL CONDITIONS (continued)

17. 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.

**Missouri Department of Natural Resources**  
**FACT SHEET**  
**FOR THE PURPOSE OF A NEW FACILITY**  
**OF**  
**MO-0136174**  
**WHITEWATER/ALLENVILLE WWTF**

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

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

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

This Factsheet is for a Major , Minor .

**Part I – Facility Information**

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

Facility Description:

Outfall #001 - POTW – SIC 4952 – Class C Operator Required  
Recirculating Filter / UV Disinfection / Sludge Disposed by contract hauler  
Design population equivalent is 304.  
Design flow is 21,300 gallons per day.  
Design sludge production is 4.6 dry tons/year.

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?  
 - No;

Application Date: 11/23/2009  
Expiration Date: N/A – New Facility  
Last Inspection: N/A – New Facility      In Compliance ;      Non-Compliance

**OUTFALL(S) TABLE:**

SEE APPENDIX A – WATER QUALITY AND ANTIDegradation REVIEW

Outfall #001

Legal Description: NW ¼, NW ¼, Sec. 05, T29N, R12E, Cape Girardeau County  
Latitude/Longitude: X = 788536 / Y = 4123710

Receiving Stream: Headwater Diversion Channel  
First Classified Stream and ID: Headwater Diversion Channel (P) (2196)  
USGS Basin & Sub-watershed No.: 07140107-0604

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

SEE APPENDIX A – WATER QUALITY AND ANTIDegradation REVIEW

Comments:

None.

**Part II – Operator Certification Requirements**

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

Check boxes below that are applicable to the facility;

- Owned or operated by or for:
  - Municipalities

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.

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

**Part III – Receiving Stream Information**

**APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:**

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

- Missouri or Mississippi River [10 CSR 20-7.015(2)]:
- Lake or Reservoir [10 CSR 20-7.015(3)]:
- Losing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:
- Subsurface Water [10 CSR 20-7.015(7)]:
- All Other Waters [10 CSR 20-7.015(8)]:

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 1<sup>st</sup> classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

**RECEIVING STREAM(S) TABLE:**

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Headwater to Diversion Channel	P	2196	LWW,AQL,WBC(A)*** SCR, DWS	07140107	Ozark/Upper St. Francis/Castor

\* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).  
 \*\* - Ecological Drainage Unit  
 \*\*\* - UAA has not been conducted.

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

SEE APPENDIX A – WATER QUALITY AND ANTIDegradation REVIEW

**MIXING CONSIDERATIONS TABLE:**

SEE APPENDIX A – WATER QUALITY AND ANTIDegradation REVIEW

**RECEIVING STREAM MONITORING REQUIREMENTS:**

No receiving water monitoring requirements recommended at this time.

SEE APPENDIX A – WATER QUALITY AND ANTIDegradation REVIEW

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

### **ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:**

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

Not Applicable ;

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

### **ANTI-BACKSLIDING:**

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

- New facility, 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.

- New and/or expanded discharge, please see **APPENDIX # – ANTIDegradation ANALYSIS**

### **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.

### **BIO-SOLIDS, SLUDGE, & SEWAGE SLUDGE:**

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

Applicable ;

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

### **COMPLIANCE AND ENFORCEMENT:**

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

Not Applicable ;

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

**PRETREATMENT PROGRAM:**

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

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

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

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

Not Applicable ;

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

**REASONABLE POTENTIAL ANALYSIS (RPA):**

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

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

Not Applicable ;

A RPA was not conducted for this facility.

**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 (BOD<sub>5</sub>) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ [www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm](http://www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm).

Applicable ;

This wastewater treatment facility is a POTW; Influent monitoring is being required to determine percent removal.

**Sanitary Sewer Overflows (SSOs), Bypasses, Inflow & Infiltration (I&I) – Prevention/Reduction:**

Sanitary Sewer Systems (SSSs) are municipal wastewater collection systems that convey domestic, commercial, and industrial wastewater, and limited amounts of infiltrated groundwater and storm water (i.e. I&I), to a POTW. SSSs are not designed to collect large amounts of storm water runoff from precipitation events.

Untreated or partially treated discharges from SSSs are commonly referred to as SSOs. SSOs have a variety of causes including blockages, line breaks, sewer defects that allow excess storm water and ground water to overload the system, lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. A SSOs is defined as an untreated or partially treated sewage release from a SSS. SSOs can occur at any point in an SSS, during dry weather or wet weather. SSOs include overflows that reach waters of the state. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations. SSSs can back up into buildings, including private residences. When sewage backups are caused by problems in the publicly-owned portion of an SSS, they are considered SSOs.

Not Applicable ;

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

**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):**

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.

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

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:

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

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

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

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

**WLA MODELING:**

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

Applicable ;

SEE APPENDIX A – WATER QUALITY AND ANTIDegradation REVIEW

**WATER QUALITY STANDARDS:**

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

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

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

Not Applicable ;

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

**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

Not Applicable ;

## **Part V – Effluent Limits Determination**

*Outfall #001* – Main Facility Outfall

### **EFFLUENT LIMITATIONS TABLE:**

SEE APPENDIX A – WATER QUALITY AND ANTIDegradation REVIEW

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

SEE APPENDIX A – WATER QUALITY AND ANTIDegradation REVIEW

### **Minimum Sampling and Reporting Frequency Requirements.**

SEE APPENDIX A – WATER QUALITY AND ANTIDegradation REVIEW

## **Part VI –2013 Water Quality Criteria for Ammonia**

Upcoming changes to the Water Quality Standard for ammonia may require significant upgrades to wastewater treatment facilities.

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels and gill breathing snails. Missouri's current ammonia criteria are based on toxicity testing of several species, but did not include data from mussels or gill breathing snails. Missouri is home to 69 of North America's mussel species, which are spread across the state. According to the Missouri Department of Conservation nearly two-thirds of the mussel species in Missouri are considered to be "of conservation concern". Nine species are listed as federally endangered, with an additional species currently proposed as endangered and another species proposed as threatened.

The adult forms of mussels that are seen in rivers, lakes, and streams are sensitive to pollutants because they are sedentary filter feeders. They vacuum up many pollutants with the food they bring in and cannot escape to new habitats, so they can accumulate toxins in their bodies and die. But very young mussels, called glochidia, are exceptionally sensitive to ammonia in water. As a result of a citizen suit, the EPA was compelled to conduct toxicity testing and develop ammonia water quality criteria that would be protective if young mussels may be present in a waterbody. These new criteria will apply to any discharge with ammonia levels that may pose a reasonable potential to violate the standards. Nearly all discharging domestic wastewater treatment facilities (cities, subdivisions, mobile home parks, etc.), as well as certain industrial and stormwater dischargers with ammonia in their effluent, will be affected by this change in the regulations.

When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the National Pollutant Discharge Elimination System (NPDES). States are required to review their water quality standards every three years, and if new criteria have been developed they must be adopted. States may be more protective than the Federal requirements, but not less protective. Missouri does not have the resources to conduct the studies necessary for developing new water quality standards, and therefore our standards mirror those developed by the EPA; however, we will utilize any available flexibility based on actual species of mussels that are native to Missouri and their sensitivity to ammonia.

Many treatment facilities in Missouri are currently scheduled to be upgraded to comply with the current water quality standards. But these new ammonia standards may require a different treatment technology than the one being considered by the permittee. It is important that permittees discuss any new and upcoming requirements with their consulting engineers to ensure that their treatment systems are capable of complying with the new requirements. The Department encourages permittees to construct treatment technologies that can attain effluent quality that supports the EPA ammonia criteria.

Ammonia toxicity varies by temperature and by pH of the water. Assuming a stable pH value, but taking into account winter and summer temperatures, Missouri includes two seasons of ammonia effluent limitations. Current effluent limitations in this permit are:

See Page 12, Table 5 Antidegradation Review in Appendix A.

Under the new EPA criteria, where mussels of the family Unionidae are present or expected to be present, the estimated effluent limitations for a facility in a location such as this that discharges to a receiving stream with the mixing consideration listed in Part III of the Fact Sheet will be:

Summer – 37.3 mg/L daily maximum, 14.3 mg/L monthly average.

Winter – 10.1 mg/L daily maximum, 3.9 mg/L monthly average.

Actual effluent limits will depend in part on the actual performance of the facility.

Operating permits for facilities in Missouri must be written based on current statutes and regulations. It is expected that the new WQS will be adopted in the next review of our standards. Therefore permits will be written with the existing effluent limitations until the new standards are adopted. To aid permittees in decision making, an advisory will be added to permit Fact Sheets notifying permittees of the expected effluent limitations for ammonia. When setting schedules of compliance for ammonia effluent limitations, consideration will be given to facilities that have recently constructed upgraded facilities to meet the current ammonia limitations.

For more information on this topic feel free to contact the Missouri Department of Natural Resources, Water Protection Program, Water Pollution Control Branch, Operating Permits Section at (573) 751-1300.

## **Part VII – Administrative Requirements**

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

### **PUBLIC NOTICE:**

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

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

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

**DATE OF FACT SHEET:** MARCH 20, 2010

### **COMPLETED BY:**

**DAVID STINSON,  
ENVIRONMENTAL ENGINEER  
SOUTHEAST REGIONAL OFFICE  
MISSOURI DEPARTMENT OF NATURAL RESOURCES  
(573) 840-9750**

### **Updated: November 13, 2013**

By: Todd Blanc, Environmental Specialist  
Water Protection Program, Engineering Section  
MDNR  
314-416-2064

**Part VII – Appendices -APPENDIX A – ANTIDegradation**

ANALYSIS:



**JUL 13 2009**

Mr. Richard Cochran, Jr.  
Waters Engineering, Inc.  
PO Box 567  
908 S. Kingshighway  
Sikeston, MO 63801

RE: Water Quality Review / Antidegradation Review Preliminary Determination on  
Antidegradation Report Proposed Wastewater Treatment Facility for Whitewater/Allenville  
Communities.

Dear Mr. Cochran:

Enclosed please find the finalized Water Quality and Antidegradation Review (WQAR) for the Whitewater Allenville Waste Water Treatment Facility (WWTF) in Cape Girardeau County. The WQAR contains pertinent antidegradation review information based on the use of existing water quality, effluent limitations and monitoring requirements for the facility discharge. It was developed in accordance with 10 CSR 20-7.031, the Clean Water Commission approved *Missouri Antidegradation Rule and Implementation Procedure* (AIP) dated May 7, 2008, U.S. Environmental Protection Agency (US EPA) guidance, the applicant-supplied antidegradation review documentation, and the State of Missouri's effluent regulations (10 CSR 20-7.015). Please refer to the *General Assumptions of the Water Quality and Antidegradation Review* section of the enclosed WQAR. The WQAR is preliminary and subject to change as new information becomes available during future permit application processing.

Based on the Missouri Department of Natural Resources (department) initial review, preliminary determination is that the applicant-supplied antidegradation review documentation satisfies the requirements of the AIP. This WQAR/preliminary determination may be appealed within 30 days of this letter in accordance with the AIP Section II.F.4.

You may proceed with submittal of an application for an operating permit and antidegradation review public notice, an engineering report, or a complete application for a construction permit. The department will not be conducting any further review of this project until a submittal is received. Any changes in facility description, design flow, or general treatment components will potentially require another antidegradation review.

Following the department's public notice of draft Missouri State Operating Permit including the antidegradation review findings and preliminary determination, the department will review any public notice comments received. If significant comments are made, the project may require

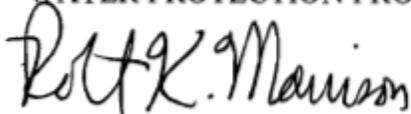
Mr. Cochran  
WQAR Whitewater/Allenville WWTF  
Page 2 of 2

another public notice and potentially another antidegradation review. If no comments are received or comments are resolved without another public notice, these findings and determinations will be considered final. Following issuance of the construction permit and completion of the actual facility construction, the department will proceed with the issuance of the operating permit.

If you should have questions regarding the enclosed WQAR, please contact Leasue Meyers by telephone at (573) 751-7906, by e-mail at [leasue.meyers@dnr.mo.gov](mailto:leasue.meyers@dnr.mo.gov), or by mail at the Missouri Department of Natural Resources, Water Protection Program, PO Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

WATER PROTECTION PROGRAM



Robert K. Morrison, P.E., Chief  
Water Pollution Control Branch

RKM:lmn

Enclosure

c: Mr. Erie Foster, Chairman-Allenville Board of Alderman  
Mr. David Stinson, Unit Chief, SERO Regional Office  
U.S. Environmental Protection Agency, Region VII

# **Water Quality and Antidegradation Review**

*For the Protection of Water Quality and Determination of Effluent Limits for  
Discharge to the Headwater Diversion Channel*

*by*

***Whitewater/Allenville Wastewater Treatment Facility***



May 18, 2009

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**1. FACILITY INFORMATION**

FACILITY NAME: Whitewater/Allenville Wastewater Treatment Facility NPDES #: NEW

FACILITY TYPE/DESCRIPTION:

Proposed wastewater collection and treatment facilities consisting of small diameter gravity sewer and recirculating sand filter followed by ultraviolet (UV) disinfection. A pipe will be built to transport the effluent from the facility to the discharge location on the Headwater Diversion Channel. The design flow of the facility is 0.021 MGD.

EDU\*: Ozark/Upper St. Francis/Castor 8-DIGIT HUC: 07140107 COUNTY: Cape Girardeau

\* - Ecological Drainage Unit

LEGAL DESCRIPTION: SE ¼, SE ¼, Section 31, T30N,R12E LATITUDE/LONGITUDE: 37°12'55.47"/-89°44'55.48"

**2. WATER QUALITY INFORMATION**

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the Missouri Department of Natural Resources (MDNR) developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body's available assimilative capacity is justified. Effective August 30, 2008, a facility is required to use *Missouri's Antidegradation Rule and Implementation Procedure (AIP)* for new and expanded wastewater discharges.

2.1. WATER QUALITY HISTORY:

This is a new discharge with no existing water quality history. There are no existing gaging stations or flow monitors in this existing location; however, USGS does have a gaging station (#0702100) approximately 25.8 miles upstream along the Castor River at Zalma, MO.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.033	Secondary	Headwater Diversion Channel	0.0

**3. RECEIVING WATERBODY INFORMATION**

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)				DESIGNATED USES**
			1Q10	7Q10	30Q10	30Q5	
Headwater Diversion Channel	P	2196	27.6	30.4	36.1	42.8	AQL, DWS, LWW, SCR WBC-A

\*\* 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)

RECEIVING WATER BODY SEGMENT #1: Headwater Diversion Channel

Upper end segment\* UTM or Lat/Long coordinates: 37° 12' 55.47"/-89° 44' 55.48"

Lower end segment\* UTM or Lat/Long coordinates: 37° 15' 8.11"/-89° 30' 52.85"

\*Segment is the portion of the stream where discharge occurs. Segment is used to track changes in assimilative capacity and is bound at a minimum by existing sources and confluences with other significant water bodies.

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**4. GENERAL COMMENTS**

Waters Engineering, Inc. prepared, on behalf of Villages of Whitewater and Allenville, the *Whitewater/Allenville Proposed Wastewater Treatment Facility Antidegradation Applicability Determination Report* dated March 24, 2009. The facility location contains 2300 feet of lineal piping to discharge into the Headwater Diversion Channel (Appendix A: Map). The tier level analysis for *E.Coli* and fecal coliform was performed and both are Tier 1 pollutants in the Castor River, and are assumed to be still Tier 1 level pollutants at the proposed discharge location on the Headwater Diversion Channel (Appendix B). Dissolved oxygen modeling analysis was submitted for review (Appendix C). Currently there are no known endangered species located in the proposed location (Appendix D). The purposed Whitewater-Allenville WWTF is discharging to a gaining stream, according to the geohydrological evaluation performed by the Division of Geology and Land Survey (Appendix E). Information found in the submitted report and in the summary forms provided by the applicant in Appendix F was used to develop this review document.

**5. ANTIDEGRADATION REVIEW INFORMATION**

The following is a review of the *Whitewater/Allenville Proposed Wastewater Treatment Facility Antidegradation Applicability Determination Report* dated March 24, 2009.

**5.1. TIER DETERMINATION**

Below is a list of pollutants of concern reasonably expected to be in the discharge (see Appendix B: Tier Determination and Effluent Limit Summary). Pollutants of concern are defined as those pollutants "proposed for discharge that affects beneficial use(s) in waters of the state. POCs include pollutants that create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge." (AIP, Page 7).

Table 1. Pollutants of Concern and Tier Determination

POLLUTANTS OF CONCERN	TIER	DEGRADATION	COMMENT
BOD <sub>5</sub> /DO	2	Minimal (modeled)	
Total Suspended Solids (TSS)	*	Not determined	Permit limits apply only
Ammonia	2	Minimal	
pH	**	Not determined	Permit limits apply only
Oil and Grease		Not determined	Permit limits apply only
Escherichia coli ( <i>E. coli</i> )	1	No further allowed	UV disinfection, E. Coli does not apply at this time; see the derivation and discussion of limits section (Sec. 10).
Fecal coliform	1	No further allowed	UV disinfection, permit limits apply.

Tier determination not possible: \* No in-stream standards for these parameters. \*\* Standards for these parameters are ranges

The following Antidegradation Review Summary attachments in Appendix D were used by the applicant:

- Tier Determination and Effluent Summary
- For pollutants of concern, the attachments are:
- Attachment A, Tier 2 with significant degradation.

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- Attachment B, Tier 2 with minimal degradation.
- Attachment D, Tier 1 Review. Additionally, a Tier 2 review must be conducted for each pollutant of concern on the appropriate water body segment

### 5.2. EXISTING WATER QUALITY

This is newly proposed facility and there is no existing water quality history along the Headwater Diversion Channel. There are no existing gaging stations or flow monitors in this existing location; however, USGS does have a gaging station (#0702100) approximately 25.8 miles upstream along the Castor River. The Water Quality Monitoring and Assessment Section in the Water Pollution Control Branch approved the use of the Castor River data for the Headwater Diversion Channel. Two separate streams join to the Castor River between the gaging station and our receiving stream segment. Those streams are Whitewater River and Crooked Creek. Because all of these streams are located in the same drainage basin, they all drain to the Ozark plateau and have similar land use. Only one significant point source (City of Marble Hill) is located upstream along Crooked Creek and its water quality affects are assumed to be attenuated by the time it reaches the Diversion Channel. From the water quality data available at the Castor River Gaging Station, *E. Coli* and Fecal Coliform are both above the water quality standard and are assumed to remain high through the Headwater Diversion Channel. The Allenville WWTF is planning to disinfect with ultraviolet light to kill the bacteria present, prior to release in the Headwater Diversion Channel.

### 5.3. ASSIMILATIVE CAPACITY CALCULATIONS

Ammonia was the only POC that the assimilative capacity could be calculated, and with the proposed limit of 25 mg/L suggested in the report, the calculated assimilative capacities were less than 1%. *Missouri's Antidegradation Rule and Implementation Procedure* considers the use of less than 10% of the facility's available assimilative capacity as insignificant degradation. The procedures indicate that cumulative degradation is measured from the time existing water quality is first determined. Because this antidegradation review serves to establish the existing water quality, the proposed construction and operation of the Whitewater/Allenville WWTF amounts to the sum total of the degradation.

Table 2: Assimilative Capacity with Proposed Ammonia Effluent Concentration

Pollutant of Concern (mg/L)	Water Quality Standards		Water Quality		Facility Assimilative Capacity		
	Acute Criteria Aquatic Life	Chronic Criteria Aquatic Life	Existing Water Quality	Proposed Effluent Concentration	Discharge load (lbs/day)	FAC (lbs/day)	FAC <sub>ratio</sub>
Ammonia-Summer	19.9	2.5	0.01	25	4.4	486	0.009
Ammonia-Winter	19.9	4.3	0.01	25	4.4	837	0.005

WLA=MDL

AML=MDL/1.5

### 5.4. DEMONSTRATION OF NECESSITY AND SOCIAL AND ECONOMIC IMPORTANCE

Missouri's antidegradation implementation procedures specify that if the proposed activity does not result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are not required.

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**6. GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDegradation REVIEW**

1. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(3), Continuing Authorities and 10 CSR 20-6.010(4) (D), consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supercede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQAR does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQAR may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.

**7. MIXING CONSIDERATIONS**

**Mixing Zone (MZ):** One-quarter (1/4) of the stream volume of flow; length one-quarter (1/4) mile. [10 CSR 20-7.031(4)(A)4.B.(III)(a)].

**Zone of Initial Dilution (ZID):** One-tenth (0.1) of the mixing zone volume of flow, not to exceed 10 times the effluent design flow. [10 CSR 20-7.031(4)(A)4.B.(III)(b)].

	Flow (cfs)	MZ (cfs)	ZID (cfs)
<b>1Q10</b>	27.6	6.9	0.33
<b>7Q10</b>	30.4	7.60	0.33
<b>30Q10</b>	36.1	9.025	0.33
<b>30Q5</b>	42.8	10.7	0.33

$$AEC\% = \left( \frac{DesignFlow + ZID}{DesignFlow} \right)^{-1} \times 100\%$$

Mixing considerations were only used for water quality-based effluent limit; otherwise, complete mixing or total flow was assumed for facility assimilative capacity and minimal degradation limit determination.

**8. PERMIT LIMITS AND INFORMATION**

WASTELOAD ALLOCATION  
 STUDY CONDUCTED (Y OR N):

N

USE ATTAINABILITY  
 ANALYSIS CONDUCTED (Y OR N):

N

WHOLE BODY CONTACT  
 USE RETAINED (Y OR N):

Y

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**OUTFALL #001**

WET TEST (Y OR N):  N\* FREQUENCY: NA AEC: NA METHOD: NA  
 \*Wet Testing does not apply as the proposed facility's design flow is less than 22,500 gallons per day.

TABLE 3. EFFLUENT LIMITS

PARAMETER	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	WQBEL (NOTE 2)	MONITORING FREQUENCY
FLOW	*		*	FSR	ONCE/MONTH
BOD <sub>5</sub> (MG/L)***		45	30	FSR	ONCE/MONTH
TSS (MG/L)		45	30	FSR	ONCE/MONTH
PH (S.U.)	**		**	FSR	ONCE/MONTH
TEMPERATURE (°C)	*		*	N/A	ONCE/MONTH
AMMONIA AS N (MG/L) (MAY 1 – OCT 31)	*		*	N/A	ONCE/MONTH
AMMONIA AS N (MG/L) (NOV 1 – APR 30)	*		*	N/A	ONCE/MONTH
ESCHERICHIA COLIFORM (E. COLI)	Please see the E. coli discussion in the Derivation & Discussion of Limits section of this WQAR below.				
FECAL COLI FORM (NOTE 1)	1000		400	FSR	ONCE/MONTH
OIL & GREASE (MG/L)	15		10	FSR	ONCE/MONTH

\* - Monitoring requirements only.

\*\* - pH shall be maintained in the range from six to nine (6.0 – 9.0) standard units [10 CSR 20-7.015(8)(B)2.].

\*\*\* - The Monthly Average for Fecal Coliform shall be reported as a Geometric Mean.

\*\*\*\* This facility is required to meet a removal efficiency of 85% or more for BOD<sub>5</sub> and TSS. Influent BOD<sub>5</sub> and TSS data should be reported to ensure removal efficiency requirements are met.

NOTE 1 – COLONIES/100 ML

NOTE 2 – WATER QUALITY-BASED EFFLUENT LIMITATION --WQBEL; OR MINIMALLY DEGRADING EFFLUENT LIMIT--MDEL; OR TECHNOLOGY-BASED EFFLUENT LIMIT--TBEL; OR NO DEGRADATION LIMIT--NDL; OR FSR -- FEDERAL/STATE REGULATION; OR N/A--NOT APPLICABLE. ALSO, PLEASE SEE THE GENERAL ASSUMPTIONS OF THE WQAR #4 & #5.

**9. RECEIVING WATER MONITORING REQUIREMENTS**

No receiving water monitoring requirements recommended at this time.

**10. DERIVATION AND DISCUSSION OF LIMITS**

Wasteload allocations and limits were calculated using two methods:

1) Water quality based – Using water quality criteria or water quality model results and the dilution equation below:

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

Where C = downstream concentration  
 C<sub>s</sub> = upstream concentration  
 Q<sub>s</sub> = upstream flow

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$C_e$  = effluent concentration  
 $Q_e$  = 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 US EPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

2) Assimilative capacity based – Using existing water quality (EWQ), water quality criteria, and the facility assimilative capacity ratio within the following equation:

$$C_{d2} = [(C_e * (Q_s + Q_{d2}) + C_s * (Q_s + Q_{d1})) FAC_{ratio} + Q_{d1} * C_{d1}] / Q_{d2}$$

Where:  $C_e$  = downstream concentration, the Water Quality Standard (WQS)

$Q_s$  = Stream 7Q10 flow (ft<sup>3</sup>/s)

$Q_{d1}$  = Current effluent design flow (ft<sup>3</sup>/s)

$Q_{d2}$  = Proposed effluent design flow (ft<sup>3</sup>/s)

$C_s$  = combined stream concentrations (calculated using EWQ, permitted discharges)

$C_{d1}$  = effluent concentration of the current facility

$C_{d2}$  = effluent concentration of the proposed facility

$FAC_{ratio}$  = facility assimilative capacity ratio (calculated or assumed)

Chronic wasteload allocations ( $WLA_c$ ) were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and upstream stream flow without mixing considerations. Acute wasteload allocations are only determined in the absence of applicable chronic criteria.

The minimally-degrading effluent average monthly and daily maximum limits are determined by applying the  $WLA_c$  as the daily maximum (MDL) and dividing the MDL by 1.5 to derive the average monthly limit. This is an accepted procedure that is defined in US EPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Note: Minimally-degrading effluent limits have been based on the authority included in Section III. Permit Consideration of the AIP.

#### 10.1. OUTFALL #001 – MAIN FACILITY DISCHARGE

- **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 (BOD<sub>5</sub>).** BOD<sub>5</sub> limits of 30 mg/L monthly average, 45 mg/L weekly average [10 CSR 20-7.015(2)(B)1].

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MDL= 97.56\*2.27= 221.9 mg/l  
 AML=97.56\*1.35 =132.5 mg/l

[CV=0.4, 99<sup>th</sup> Percentile]  
 [CV=0.4, 95<sup>th</sup> Percentile, n=30]

**Winter:**  
 Chronic

$$C_e = \frac{((Q_e + Q_s) * C) - (Q_s * C_s)}{Q_e}$$

$$C_e = \frac{(((0.033 + 9.0) * 4.3) - (9.0 * 0.01))}{0.033} = 1190$$

Acute

$$C_e = \frac{((Q_e + Q_s) * C) - (Q_s * C_s)}{Q_e}$$

$$C_e = \frac{(((0.033 + 0.33) * 19.9) - (0.33 * 0.01))}{0.033} = 221.9$$

LTA<sub>c</sub>= 1190\*0.846 =1007.5 mg/l  
 LTA<sub>a</sub>=221.90\*0.44 =**97.56 mg/l**  
 MDL= 97.56\*2.27= 221.9 mg/l  
 AML=97.56\*1.35 =132.5mg/l

[CV=0.4, 99<sup>th</sup> Percentile, 30 day avg.]  
 [CV=0.4, 99<sup>th</sup> Percentile]  
 [CV=0.4, 99<sup>th</sup> Percentile]  
 [CV=0.4, 95<sup>th</sup> Percentile, n=30]

Season	Maximum Daily Limit	Average Monthly Limit
Summer	221.9	132.5
Winter	221.9	132.5

- **E. coli.** This facility may be required to have E. coli effluent limitations when Missouri adopts the implementation of the E. Coli effluent regulations. Also, please see **GENERAL ASSUMPTIONS OF THE WQAR #7**. The addition of these limits will depend on new E. Coli rule and finalizing the operating permit.
- **Fecal Coliform.** Discharge shall not contain more than a monthly geometric mean of 400 colonies/100 mL and a daily maximum of 1000 colonies/100 mL during the recreational season (April 1 – October 31) [10 CSR 20-7.015(2)(B)4.A.]. Future renewals of the facility operating permit will contain effluent limitations for E. Coli that will replace fecal coliform as the applicable bacteria criteria in Missouri's water quality standards when Missouri adopts the implementation of the E. Coli standards. Also, please see **GENERAL ASSUMPTIONS OF THE WQAR #7**.
- **Oil & Grease.** Conventional pollutant, [10 CSR 20-7.031, Table A]. Effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

10.2. LIMIT DERIVATION

The process for limit derivation for POCs that are minimally degrading is as follows:

- 1) Determine using method #2 outlined above for all applicable POCs the minimally degrading wasteload allocation and effluent limits (MDEL) that retains the remaining assimilative capacity and does not exceed 10% of the FAC.

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- 2) Determine the need for permit limits of various POCs using reasonable potential analysis. While this process is applied to all applicable POCs, this process is particularly important for POCs having monitoring only requirements for an existing discharge. No POC will exceed the maximum daily limit (MDL). Limits that exceed the MDL of the MDEL may have MDEL applied. Some POCs may have the limit applied under certain circumstances.
- 3) To determine if any of the above proposed limits are protective of water quality standards, the final step is to develop water quality-based effluent limits. The more stringent of the MDEL and WQBEL will be applied.

The final step in the limit determination process is the comparison of the water quality-based effluent limit (WQBEL) and the minimally degrading effluent limit. Table 3 shows the WQBEL for ammonia, while the minimally degrading effluent limits are in Table 4. Table 5 provides a comparison of the WQBEL to the MDEL, which demonstrates the WQBEL are more stringent than the MDEL. The WQBEL would apply as the permit limits; however as this is a new facility, monitoring only is the requirement. Upon renewal, a reasonable potential analysis will be conducted to determine the need for the ammonia limits.

$$FAC = [(C_c * (Q_s + Q_d)) - (EWQ * Q_s)] * CF \quad C_d = \frac{[FAC_{ratio} * (((C_c * (Q_s + Q_d)) - (EWQ * Q_s)))]}{Q_d}$$

$$DL = Q_d * C_d * CF$$

WHERE:

- C<sub>c</sub> = downstream concentration, the Water Quality Standard (WQS)
- C<sub>d</sub> = effluent concentration of the proposed facility
- C<sub>s</sub> = combined stream concentrations (calculated using EWQ, permitted discharges)
- Q<sub>s</sub> = Stream 7Q10 flow (ft<sup>3</sup>/s)
- Q<sub>d</sub> = Proposed effluent design flow (ft<sup>3</sup>/s)
- FAC<sub>ratio</sub> = facility assimilative capacity ratio (calculated or assumed)
- DL = discharge load (lbs/day)

TABLE 4: MINIMALLY DEGRADING EFFLUENT LIMITS

POLLUTANT OF CONCERN	WATER QUALITY STANDARDS		WATER QUALITY	FACILITY ASSIMILATIVE CAPACITY			WASTELOAD ALLOCATION			
	ACUTE CRITERIA AQUATIC LIFE	CHRONIC CRITERIA AQUATIC LIFE	EXISTING WATER QUALITY <sup>1</sup>	DISCHARGE LOAD (LBS/DAY)	FAC(LBS /DAY) CHRONIC	FAC <sub>RATIO</sub> <sup>2</sup>	WLA <sub>C</sub>	WLA <sub>A</sub>	MDL	AML
AMMONIA-SUMMER(MG/L)	19.9	2.5	0.01	48.10	486	0.099	273	0.00	273	182
AMMONIA-WINTER(MG/L)	19.9	4.3	0.01	82.29	837	0.099	468	0.00	468	312

WLA=MDL      AML= MDL/1.5

Footnote 1: Receiving Stream information received from USGS station 25.8 miles upstream at Zalma, MO.

Footnote 2: FACratio can not exceed to maintain Minimal Degradation

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TABLE 5: COMPARISON OF EFFLUENT LIMITS FOR AMMONIA

Ammonia (mg N/L)	Summer		Winter	
	MDL	AML	MDL	AML
WQBEL	221.9	132.5	221.9	132.5
MDEL	273	182	468	312

Thus, the future reasonable potential analysis should target Water Quality Standards.

#### 11. ANTIDegradation REVIEW PRELIMINARY DETERMINATION

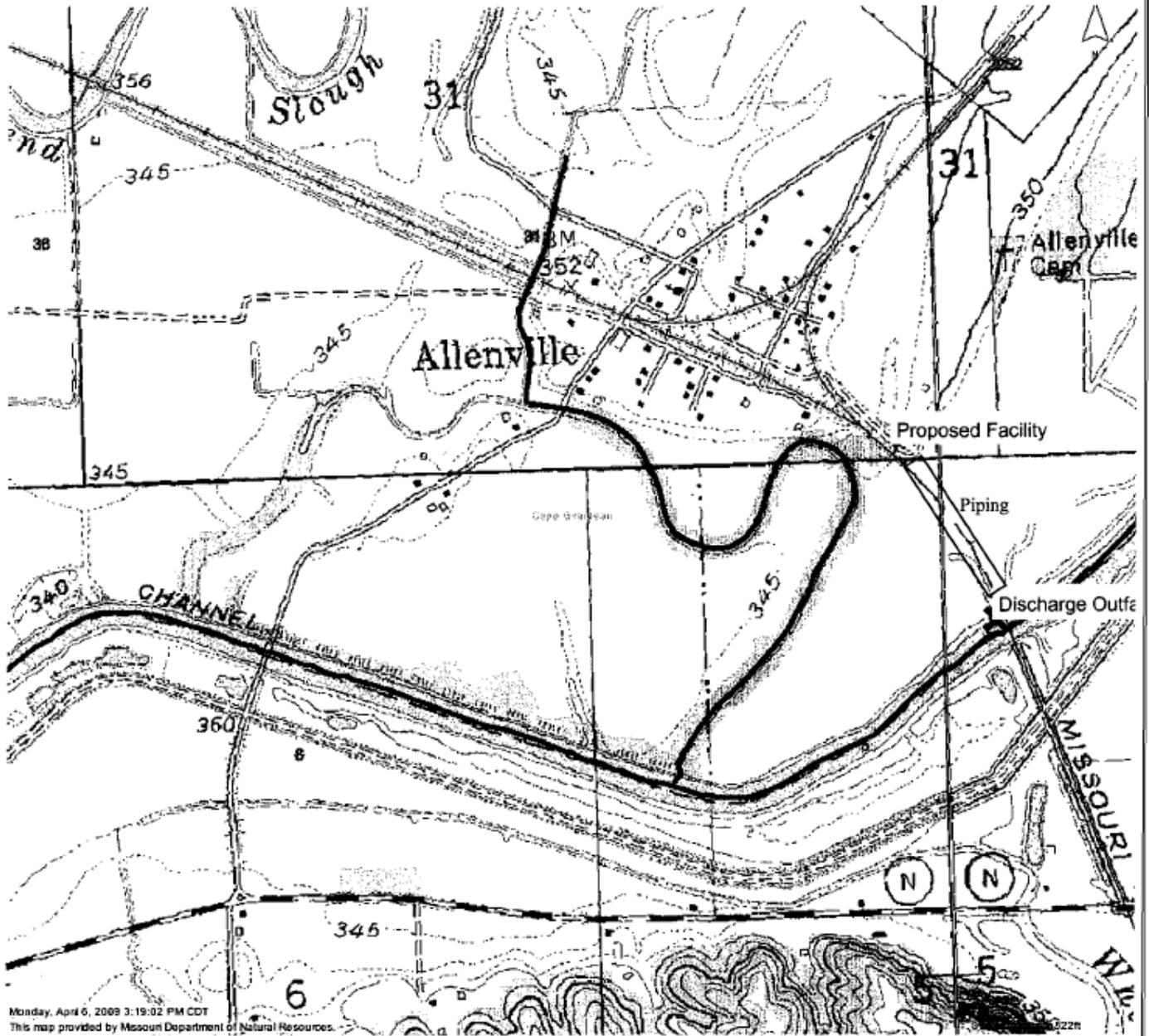
The proposed construction of the Whitewater/Allenville WWTF of 0.021 MGD will result in minimal degradation of the segment identified in the Headwater Diversion Channel. Per the requirements of the AIP, the effluent limits in this review were developed to be protective of beneficial uses and to retain the remaining assimilative capacity. MDNR has determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Leasue J. Meyers/Todd J. Blanc *TJB*  
Date: 05/18/09  
Unit Chief: John Rustige *JR*  
Section Chief: Refaat Mefrakis

Monitoring and effluent limits contained within this document have been developed in accordance with EPA guidelines using the best available data and are believed to be consistent with Missouri's Water Quality Standards and Effluent Regulations. If additional water quality data or anecdotal information are available that may affect the recommended monitoring and effluent limits, please forward these data and information to the author.

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**Appendix A: Map of Proposed Facility and Discharge Locations**



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**Appendix B: Tier Level for Pollutants of Concern: *E. Coli* and Fecal Coliform.**

Data taken at the Castor River, Zalma, MO Gaging Station during the Recreational Season. Values are geometric means and are colonies per 100 mL.

**E. Coli**

<b>Recreation Season( April-October)</b>	
4/16/2007	150
5/16/2007	140
6/26/2007	420
7/19/2007	66
9/11/2007	130
5/13/2008	110
7/15/2008	30
9/9/2008	88
10/16/2008	68
<b>#of Samples:</b>	<b>9</b>
<b>Mean:</b>	<b>133.56</b>
<b>Max:</b>	<b>420</b>
<b>Min:</b>	<b>30</b>
<b>90th Percentile:</b>	<b>204</b>
<b>Stdev:</b>	<b>114.34</b>
<b>CV:</b>	<b>0.86</b>
<b>95% of the standard (126 colonies/100mL):</b>	<b>119.7</b>
<b>P90 of the recreation season sample:</b>	<b>204</b>
<b>P90 &gt; 95% of the standard:</b>	<b>204&gt; 119.7, Tier 1 POC</b>

**Fecal Coliform**

<b>Recreation Season(April-October)</b>	
5/10/2000	21
7/25/2000	75
9/13/2000	44
5/9/2001	32
7/19/2001	360
9/5/2001	63
5/13/2002	7800
7/10/2002	180
9/10/2002	46
5/14/2003	82
7/22/2003	100
9/4/2003	1200
5/4/2004	120
7/7/2004	320
9/8/2004	120
5/17/2005	180
7/18/2005	120
9/6/2005	26
5/8/2006	94
7/10/2006	52
9/12/2006	98
4/16/2007	160
5/16/2007	190
6/26/2007	630
7/19/2007	100
9/11/2007	160
5/13/2008	150
7/15/2008	57
9/9/2008	150
10/16/2008	710
<b>#of Samples:</b>	<b>30</b>
<b>Mean:</b>	<b>448</b>
<b>Max:</b>	<b>7800</b>
<b>Min:</b>	<b>21</b>
<b>90th percentile:</b>	<b>638</b>
<b>Stdev:</b>	<b>1410.54</b>
<b>CV:</b>	<b>3.15</b>
<b>95% of the standard (200 colonies/100mL):</b>	<b>190</b>
<b>P90 of the recreation season sample:</b>	<b>638</b>
<b>P90 &gt; 95% of the standard:</b>	<b>638&gt;190, Tier 1 POC</b>

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**Appendix C: Streeter Phelps Model Results for the Proposed Design Flow**

**Attachment F**  
 Streeter-Phelps analysis of critical dissolved oxygen sag.  
 Villages of Whitewater/Allenville  
 Based on Lotus File DOSAG2.WK1 Revised 19-Oct-93

**INPUT**

<b>1. EFFLUENT CHARACTERISTICS</b>			
Discharge (cfs):			0.03
CBOD5 (mg/L):			45
NBOD (mg/L):			114.25
Dissolved Oxygen (mg/L):			0
Temperature (deg C):			26
<b>2. RECEIVING WATER CHARACTERISTICS</b>			
Upstream Discharge (cfs):			7.6
Upstream CBOD5 (mg/L):			2.0
Upstream NBOD (mg/L):			0
Upstream Dissolved Oxygen (mg/L):			6.86
Upstream Temperature (deg C):			22.6
Elevation (ft NGVD):			326
Downstream Average Channel Slope (ft/ft):			0.000284
Downstream Average Channel Depth (ft):			0.39
Downstream Average Channel Velocity (fps):			0.11
<b>3. REAERATION RATE (Base e) AT 20 deg C (day<sup>-1</sup>):</b>			
			17.57
Reference	Applic. Vel (fps)	Applic. Dep (ft)	Suggested Values
Churchill	1.5 - 6	2 - 50	6.60
O'Connor and Dobbins	.1 - 1.5	2 - 50	17.65
Owens	.1 - 6	1 - 2	28.10
Tsilvoglou-Wallace	.1 - 6	1 - 2	0.22
<b>4. BOD DECAY RATE (Base e) AT 20 deg C (day<sup>-1</sup>):</b>			
			3.74
Reference			Suggested Value
Wright and McDonnell, 1979			3.33

**OUTPUT**

<b>1. INITIAL MIXED RIVER CONDITION</b>	
CBOD5 (mg/L):	2.2
NBOD (mg/L):	0.4
Dissolved Oxygen (mg/L):	6.8
Temperature (deg C):	22.6
<b>2. TEMPERATURE ADJUSTED RATE CONSTANTS (Base e)</b>	
Reaeration (day <sup>-1</sup> ):	18.69
BOD Decay (day <sup>-1</sup> ):	4.22
<b>3. CALCULATED INITIAL ULTIMATE CBODU AND TOTAL BODU</b>	
Initial Mixed CBODU (mg/L):	3.2
Initial Mixed Total BODU (CBODU + NBOD, mg/L):	3.6
<b>4. INITIAL DISSOLVED OXYGEN DEFICIT</b>	
Saturation Dissolved Oxygen (mg/L):	8.541
Initial Deficit (mg/L):	1.71
<b>5. TRAVEL TIME TO CRITICAL DO CONCENTRATION (days):</b>	
	0.00
<b>6. DISTANCE TO CRITICAL DO CONCENTRATION (miles):</b>	
	0.00
<b>7. CRITICAL DO DEFICIT (mg/L):</b>	
	1.71
<b>8. CRITICAL DO CONCENTRATION (mg/L):</b>	
	6.83

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**Appendix D: National Heritage Review Evaluation**

Tuesday Feb 17, 2009

<http://mdcgis.mdc.mo.gov/heritage/docs/response/11.asp>



**Natural Heritage Review  
On-line LEVEL 1 REPORT**

*Print this page and use/attach as documentation that your project has consulted with the Missouri Department of Conservation and the U.S. Fish and Wildlife Service about species of conservation concern. No further consultation about this project is necessary.*

February 17, 2009

Your login and project information below:

User ID: 1028  
First Name: Richard  
Last Name: Cochran  
Email Address: roochran@waterseng.com  
Business: Waters Engineering  
Project: Wastewater

Your query information below:

User ID	Response Level	Township	Range	Section	Direction	Latitude	Longitude	Point	Line	UTM North	UTM East	Rectangle	TimeStamp
1028						37.215	-89.749	0	0				2/17/2009 4:10:21 PM

**Wastewater**

**Wastewater – storm sewer, sanitary sewer, treatment plant, discharge**

Clean Water Act permits issued by other agencies regulate both construction and operation of wastewater and storm water systems, and provide many important protections for fish and wildlife resources throughout the project area and at some distance downstream.

Fish and wildlife almost always benefit when unnatural pollutants are removed from water, and concerns are minimal if (a) the project area includes no protected species or restricted habitat identified in this report, and (b) construction is managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any "Clean Water Permit" conditions.

Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with of native plant species compatible with the local landscape and for wildlife needs. Annual ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crown vetch and sericea lespedeza.

Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers is a Conservation Department publication available at <http://www.mdc.mo.gov/documents/waters/enhancedstreams.pdf>

**Cautions related to species/habitats of concern or project type. Please reflect these concerns and recommendations in your plans :**

- Even if records of species/habitats of concern do not exist, there is a possibility that your project will encounter a species of concern that is not on record. In Missouri, 93% of the land is in private ownership, and most of that has never been checked for endangered species. Animals move over varying ranges, and in time both animal and plant populations can move.
- If your project encounters and potentially affects a federally-listed species, immediately report it to the U.S. Fish and Wildlife Service or Missouri Department of Conservation.

**No further consultation with the U.S. Fish and Wildlife Service or the Missouri Department of Conservation is necessary.** Print this document to establish compliance with requirements to consult with U.S. Fish and Wildlife Service and the Missouri Department of Conservation about this project.

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Appendix E: Geohydrological Evaluation



Missouri Department Of Natural Resources

Division of Geology and Land Survey  
 P.O. Box 250  
 Rolla, Missouri 65402-0250  
 Phone - 573.368.2161 Fax - 573.368.2111  
 E-mail - gspjgd@dnr.mo.gov

Project ID Number

LWE09103

County

CAPE GIRARDEAU



Project **Litbourn Wastewater System Improvements** Quadrangle **WHITWATER**  
 Location **SE1/4 SE1/4** Section **31** Township **30 N** Range **12 E**  
 Additional Location Information  
 Latitude **37 Deg 13 Min 1 Sec** Longitude **89 Deg 45 Min 18 Sec**

**Villages of Whitewater and Allenville** (573) 576-5900  
 150 W. Front, Chaffee, MO 63740

**Waters Engineering, Inc.** (573) 471-6680  
 Richard Cochran, P.E.  
 P.O. Box 567, Sikeston, MO 63801

Previous Reports  Not Applicable

Date  
 Identification Number  
 Fiscal Year

- |   |   |  |
|---|---|--|
| <input type="radio"/> Mechanical treatment plant          | <input type="radio"/> Animal                | <input checked="" type="radio"/> PPG                           |
| <input checked="" type="radio"/> Recirculating filter bed | <input checked="" type="radio"/> Human      | <input type="radio"/> WWLF-SRF                                 |
| <input type="radio"/> Earthen lagoon with discharge       | <input type="radio"/> Process or industrial | <input type="radio"/> Non-Point Source                         |
| <input type="radio"/> Earthen holding basin               | <input type="radio"/> Leachate              | <input type="radio"/> Plans were submitted                     |
| <input type="radio"/> Land application                    | <input type="radio"/> Other waste type      | <input type="radio"/> Site was investigated by NRCS            |
| <input type="radio"/> Other type of facility              |   | <input type="radio"/> Soil or geotechnical data were submitted |

**3/11/2009**  Gaining  Losing  No discharge

- |   |   |                                       |                                     |  |
|---|---|---------------------------------------|-------------------------------------|--|
| <input checked="" type="radio"/> Slight | <input checked="" type="radio"/> Not applicable | <input checked="" type="radio"/> < 4% | <input type="radio"/> Broad uplands | <input type="radio"/> Floodplain         |
| <input type="radio"/> Moderate          | <input type="radio"/> Slight                    | <input type="radio"/> 4% to 8%        | <input type="radio"/> Ridgetop      | <input type="radio"/> Alluvial plain     |
| <input type="radio"/> Severe            | <input type="radio"/> Moderate                  | <input type="radio"/> 8% to 16%       | <input type="radio"/> Hillslope     | <input checked="" type="radio"/> Terrace |
|   | <input type="radio"/> Severe                    | <input type="radio"/> > 15%           | <input type="radio"/> Narrow ravine | <input type="radio"/> Sinkhole           |

The uppermost bedrock is the Ordovician-age Smithville Dolomite.

Surficial materials consist of approximately 100 feet of sandy alluvium.

Project ID Number **LWE09103**

Page 2

[REDACTED]

- Installation of clay pad
- Diversion of subsurface flow
- Rock excavation
- Compaction
- Artificial sealing
- Limit excavation depth

[REDACTED]

[REDACTED]

[REDACTED]

- Particle size analysis
- Standard Proctor density
- Permeability coefficient for undisturbed sample
- Atterberg limits
- Overburden thickness
- Permeability coefficient for remolded sample

[REDACTED]

- Groundwater elevation
- Direction of groundwater flow
- 25-year flood level
- 100-year flood level

[REDACTED]

- Before exploration
- During construction
- After construction
- Not necessary

[REDACTED]

On March 11, 2009, a site visit was performed on a proposed recirculating filter bed for the Lilbourn Wastewater System Improvement. The purpose of the site visit was to observe the geologic and hydrologic elements of the site and determine how they relate to facility construction and the potential for groundwater contamination in the event that treatment failure occurs.

The site is located on a terrace within the Southeastern Lowlands Physiographic Province. Potential runoff from the site is directly toward the Headwater Diversion Channel. The stream was observed to be gaining at the site. No karst features were identified near the site.

The Ordovician-age Smithville Dolomite underlies the site however; this low to moderately permeable fossiliferous unit is buried under thick alluvial sediments and is not expected to be a limiting factor at the site.

The well logs for the area indicate that the surficial materials on-site consist of approximately 100 feet of high permeability sandy alluvium. Due to the high permeability of the surficial material, it is recommended that the recirculating filter bed contain an artificially lined base.

Based on the geologic and hydrologic characteristics observed, this site receives a slight overall geologic limitations rating.

This document is a preliminary report. It is not a permit. Additional data may be required by the Department of Natural Resources prior to the issuance of a permit. This report is valid only at the above location and becomes invalid one year after the report date below.

Report By: Joseph Sanchez

Report Date: 3/16/2009

CC: WPP, SERO



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**Appendix F: Antidegradation Review Summary Attachments**

The attachments that follow contain summary information provided by the applicant, City of Allenville including Tier Determination, Effluent Limit Summary Sheet, Waterbody segment coordinates, and the proposed effluent limits. The discharge load and assimilative capacity varies was changed in the Antidegradation Review based on review of the data. The proposed Ammonia permit limit is different in the Antidegradation Review as compared to the proposed limit of 25 mg/l. DNR proposes monitoring only because this is a new facility and upon comparison with the water quality based effluent limits.

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MISSOURI DEPARTMENT OF NATURAL RESOURCES  
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH  
**WATER QUALITY REVIEW ASSISTANCE/ANTIDegradation REVIEW REQUEST**  
 PRE-CONSTRUCTION REVIEW FOR PROTECTION OF BENEFICIAL USES AND DEVELOPING EFFLUENT LIMITS

TYPE OF PROJECT			
<input checked="" type="checkbox"/> Grant <input type="checkbox"/> SRF Loan <input checked="" type="checkbox"/> All Other Projects			
REQUESTER		TELEPHONE NUMBER WITH AREA CODE	
RICHARD E. COCHRAN, JR.		573-471-6680	
PERMITTEE		TELEPHONE NUMBER WITH AREA CODE	
WHITEWATER-ALLENVILLE COOPERATIVE PWS & SEWER SYSTEM		573-576-5966	
<input checked="" type="checkbox"/> New Facility (See Instruction #9) <input type="checkbox"/> Upgrade (No expansion) (See AIP, Section II B.1) <input type="checkbox"/> Expansion			
DESCRIPTION OF PROPOSED ACTIVITY			
PROPOSED WASTEWATER COLLECTION AND TREATMENT FACILITIES CONSISTING OF SMALL DIAMETER GRAVITY SEWER WITH RECIRCULATING SAND FILTER FOLLOWED BY UV DISINFECTION			
FACILITY NAME		MSOP NUMBER (IF APPLICABLE)	
WHITEWATER/ALLENVILLE WASTEWATER TREATMENT FACILITY			
COUNTY		SIC / NAICS CODE	
CAPE GIRARDEAU		221310	
METHOD OF BACTERIA COMPLIANCE			
<input type="checkbox"/> Chlorine Disinfection <input checked="" type="checkbox"/> Ultraviolet Disinfection <input type="checkbox"/> Ozone <input type="checkbox"/> Not Applicable			
WATER QUALITY ISSUES			
NONE			
Water quality issues include: effluent limit compliance issues, notice (s) of violation, water body beneficial uses not attained or supported, etc.			
OUTFALL	LOCATION (LAT/LONG OR LEGAL DESCRIPTION)	MAPPED (CHECK)	RECEIVING WATER BODY
1	37°12'55.47" / 89°44'55.48"	<input checked="" type="checkbox"/>	HEADWATER DIVERSION CHANNEL
		<input type="checkbox"/>	
		<input type="checkbox"/>	
1 Please attach topographic map (See <a href="http://www.dnr.mo.gov/Internetmapviewer/">www.dnr.mo.gov/Internetmapviewer/</a> ) with outfall location(s) clearly marked. For additional outfalls, attach a separate form. 2 Please see general instructions for discharges to streams.			
OUTFALL	NEW DESIGN FLOW** (MGD)	TREATMENT TYPE	EFFLUENT TYPES*
1	0.021	RECIRCULATING SAND FILTER	DOMESTIC
* Describe predominating character of effluent. Example: Domestic Wastewater, Municipal Wastewater, Industrial Wastewater, Storm water, Mining Leachate, etc. ** If expansion, indicate new design flow.			
<input checked="" type="checkbox"/> Checked for rare or endangered species and provided determination with this request. See Instruction #8.			
<b>ANTIDegradation REVIEW SUBMISSION:</b>			
See attached Antidegradation instructions. Applicant supplied a summary within:			
<input checked="" type="checkbox"/> Tier Determination and Effluent Limit Summary			
<input type="checkbox"/> Attachment A - Significant Degradation			
<input checked="" type="checkbox"/> Attachment B - Minimal Degradation			
<input type="checkbox"/> Attachment C - Temporary degradation			
<input checked="" type="checkbox"/> Attachment D - Tier 1 Review			
<input checked="" type="checkbox"/> No Degradation Evaluation - Conclusion of Antidegradation Review			

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MISSOURI DEPARTMENT OF NATURAL RESOURCES  
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH  
**ANTIDEGRADATION REVIEW SUMMARY**  
**TIER DETERMINATION AND EFFLUENT LIMIT SUMMARY**

**1. FACILITY**

NAME WHITewater/ALLENVILLE WASTEWATER TREATMENT PLANT		TELEPHONE NUMBER WITH AREA CODE 573-576-5966	
ADDRESS (PHYSICAL)	City ALLENVILLE	STATE MO	ZIP CODE 63740

**2. RECEIVING WATER BODY SEGMENT #1**

NAME HEADWATER DIVERSION CHANNEL			
2.1	UPPER END OF SEGMENT (Location of discharge)	Lat	Long
	UTM _____ OR _____	37°12'55.47"	89°44'55.48"
2.2	LOWER END OF SEGMENT	Lat	Long
	UTM _____ OR _____	37°15'8.11"	89°30'52.85"

Per the Missouri Antidegradation Rule and Implementation Procedure, or AIP, the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."

**3. WATER BODY SEGMENT #2 (IF APPLICABLE)**

NAME			
3.1	UPPER END OF SEGMENT	Lat	Long
	UTM _____ OR _____	_____	_____
3.2	LOWER END OF SEGMENT	Lat	Long
	UTM _____ OR _____	_____	_____

**4. WATER BODY SEGMENT #3 (IF APPLICABLE)**

NAME			
4.1	UPPER END OF SEGMENT	Lat	Long
	UTM _____ OR _____	_____	_____
4.2	LOWER END OF SEGMENT	Lat	Long
	UTM _____ OR _____	_____	_____

**5. PROJECT INFORMATION**

Is the receiving water body an Outstanding National Resource Water, an Outstanding State Resource Water, or drainage thereto?  
 Yes     No  
 In Tables D and E of 10 CSR 20-7.031, Outstanding National Resource Waters and Outstanding State Resource Water are listed. Per the Antidegradation Implementation Procedure Section 1 B.3, "any degradation of water quality is prohibited in these waters unless the discharge or by results in temporary degradation." Therefore, if degradation is significant or minimal, the Antidegradation Review will be denied.

Will the proposed discharge of all pollutants of concern, or POCs, result in net increase in the ambient water quality concentration of the receiving water after mixing?  
 Yes     No  
 If yes, submit a summary table showing the levels of each pollutant of concern before and after the proposed discharge in the receiving water and then complete Attachment B for the first downstream classified water body segment.

Will the discharge result in temporary degradation?  
 Yes     No  
 If yes, complete Attachment C.

Has the project been determined as non-degrading? **SYSTEM UNDERGOES UV DISINFECTION TREATMENT TO KILL BACTERIA**  
 Yes     No  
 If yes, complete No Degradation Evaluation - Conclusion of Antidegradation Review form.  
 Submit with the appropriate Construction Permit Application as no antidegradation review is required.  
 If yes to one of the above questions, skip to Section 8 - Wet Weather.

Whitewater/Allenville WWTP, Headwater Diversion Channel  
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MISSOURI DEPARTMENT OF NATURAL RESOURCES  
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH  
**ANTIDegradation REVIEW SUMMARY**  
**ATTACHMENT B: TIER 2 - MINIMAL DEGRADATION**

**1. FACILITY**

NAME WHITEWATER-AlLENVILLE WASTEWATER TREATMENT PLANT		TELEPHONE WITH AREA CODE 573-576-5966	
ADDRESS (PHYSICAL)	CITY AlLENVILLE	STATE MO	ZIP CODE 63740

**2. RECEIVING WATER BODY SEGMENT #1**

NAME  
HEADWATER DIVERSION CHANNEL

**3. WATER BODY SEGMENT #2 (IF APPLICABLE)**

NAME

**4. ASSIMILATIVE CAPACITY TABLE**

Determining the facility assimilative capacity, or FAC, and the segment assimilative capacity, or SAC for each pollutant of concern is explained in detail in the Antidegradation Implementation Procedure Section II.A.3. and Appendix 3. POCs to be considered include those pollutants reasonably expected to be present in the discharge per the Antidegradation Implementation Procedure Section II.A. Provide all calculations in the Antidegradation Review report.

Pollutant of Concern	Facility Assimilative Capacity		New Load	Percent of Facility Assimilative Capacity
	(lbs/day)			
AMMONIA - SUMMER	502.8	4.05		
AMMONIA - WINTER	815	4.05		
OIL & GREASE	1643.2	2.43		

Pollutant of Concern	Water Body Segment #1 SAC	Cumulative Net Increase in Load	Cumulative % of Water Body Segment #1 SAC	Water Body Segment #2 SAC	Cumulative Net Increase in Load	Cumulative % of Water Body Segment #2 SAC

Assimilative Capacity Summary  
 AMMONIA IS SHOWN TO BE MINIMALLY DEGRADING

Is degradation considered minimal for all Pollutants of Concern?  Yes  No

Degradation is considered minimal if the new or proposed loading is less than 10 percent of the FAC and the cumulative degradation is less than 20 percent of the SAC according to the Antidegradation Implementation Procedure Section II.A.3. If yes, an alternatives analysis and a social and economic importance analysis are not required.

Comment/Discussion

FAC/SAC CANNOT BE CALCULATED FOR TEMP, BOD/DO. OTHER CALCS PROVIDED SHOW THEM TO BE MINIMALLY DEGRADING AS WELL.

Whitewater/Allenville WWTP, Headwater Diversion Channel  
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**MINIMAL DEGRADATION CALCULATIONS**  
**SEE ATTACHED**  
MC 780-2022 (01/08)

**5. OIL AND GREASE**  
Is this a publicly owned treatment works, or POTW, restaurant, school or other domestic wastewater treatment facility with oil and grease as a Pollutant of Concern?  Yes  No  
In accordance with 10 CSR 20-7.031(3)(B), waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses. In accordance with 10 CSR 20-7.031 Table A, oil and grease has a chronic toxicity of 10 mg/L for protection of aquatic life. This facility will meet the effluent limits (MCL and AML of 15 mg/L and 10 mg/L, respectively)

**6. DECHLORINATION**  
If Chlorination and Dechlorination is the existing or proposed method of disinfection treatment, will the effluent discharged be equal to or less than the Water Quality Standards for Total Residual Chlorine stated in Table A of 10 CSR 20-7.031?  
 Yes  No  
Based on the disinfection treatment system being designed for total removal of Total Residual Chlorine, minimal degradation for Total Residual Chlorine is assumed and the facility will be required to meet the water quality based effluent limits. These compliance limits for Total Residual Chlorine are much less than the method detection limit of 0.13 mg/L.

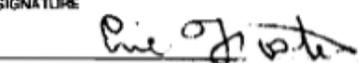
**7. PROPOSED PROJECT SUMMARY**  
ALL POC'S ARE SHOWN TO BE MINIMALLY DEGRADING.

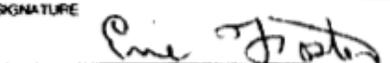
Attach the Antidegradation Review report and all supporting documentation.  
**CONSULTANT:** I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the AIP and current state and federal regulations.

SIGNATURE  DATE 4/7/09

PRINT NAME RICHARD COCHRAN, JR. P.E.

TELEPHONE NUMBER WITH AREA CODE 573-471-5680 E-MAIL ADDRESS rcochran@waterseng.com

**OWNER:** I have read and reviewed the prepared documents and agree with this submittal.  
SIGNATURE  DATE 4/6/09

**CONTINUING AUTHORITY:** I have read and reviewed the prepared documents and agree with this submittal.  
SIGNATURE  DATE 4/6/09

Whitewater/Allenville WWTP, Headwater Diversion Channel  
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**9. SUMMARY OF THE PROPOSED ANTI-DEGRADATION REVIEW EFFLUENT LIMITS**

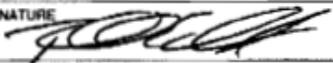
What are the proposed pollutants of concern and their respective effluent limits that the selected treatment option will comply with:

Pollutant of Concern	Units	Waste-load Allocation	Average Monthly Limit	Daily Maximum Limit
BOD5	MG/L		30	45
TSS	MG/L		30	45
Dissolved Oxygen	MG/L			
Ammonia	MG/L		25	25
Bacteria (E. Coll)	COLONIES/100 ML.		WQS	WQS
OIL & GREASE	MG/L		10	15
BACTERIA (FECAL)	COLONIES/100 ML.		400	1000

These proposed limits must not violate water quality standards, be protective of beneficial uses and achieve the highest statutory and regulatory requirements.

Attach the Antidegradation Review report and all supporting documentation.

**CONSULTANT:** I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the Antidegradation Implementation Procedure and current state and federal regulation.

SIGNATURE  DATE 4/7/09

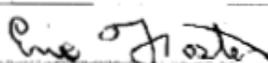
NAME AND OFFICIAL TITLES  
 RICHARD COCHRAN, JR., P.E.

COMPANY NAME  
 WATERS ENGINEERING, INC

ADDRESS CITY STATE ZIP CODE  
 P.O. BOX 567 SIKESTON MO 63801

TELEPHONE NUMBER WITH AREA CODE E-MAIL ADDRESS  
 573-471-5680 RCOCHRAN@WATERSHNG.COM

**OWNER:** I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE  DATE 4/6/09

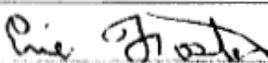
NAME AND OFFICIAL TITLES  
 ERIE FOSTER, CHAIRMAN - ALLENVILLE BOARD OF ALDERMEN

ADDRESS CITY STATE ZIP CODE  
 150 W FRONT CHAFFEE MO 63740

TELEPHONE NUMBER WITH AREA CODE E-MAIL ADDRESS  
 573-576-5966 NONE

**CONTINUING AUTHORITY:** Continuing Authority is the permanent organization that will be responsible for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is found in 10 CSR 20-8.010(3) available at [www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf](http://www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf).

I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE  DATE 4/6/09

NAME AND OFFICIAL TITLES  
 ERIE FOSTER

ADDRESS CITY STATE ZIP CODE  
 150 W FRONT CHAFFEE MO 63740

TELEPHONE NUMBER WITH AREA CODE E-MAIL ADDRESS  
 573-576-5966 NONE

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MISSOURI DEPARTMENT OF NATURAL RESOURCES  
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH  
**ANTIDegradation REVIEW SUMMARY**  
**ATTACHMENT D: TIER 1 REVIEW**

**1. FACILITY**

NAME <b>WHITewater ALLENVILLE WASTEWATER TREATMENT PLANT</b>		TELEPHONE NUMBER WITH AREA CODE <b>573-576-5966</b>	
ADDRESS (PHYSICAL)	CITY <b>ALLENVILLE</b>	STATE <b>MO</b>	ZIP CODE <b>63740</b>

**2. RECEIVING WATER BODY SEGMENT #1**

NAME  
**HEADWATER DIVERSION CHANNEL**

**3. WATER BODY SEGMENT #2 (IF APPLICABLE)**

NAME

Tier 1 Pollutant of Concern	Concentration Units (mg/L or µg/L)	95 Percent of Water Quality Standard	90 <sup>th</sup> Percentile of Water Body Segment #1 Sampling Results	90 <sup>th</sup> Percentile of Water Body Segment #1 Sampling Results
FECAL COLIFORM	COL/100 ML	190	204	
E COLI	COL/100 ML	120	275	

**4. IDENTIFYING NON-DISCHARGING ALTERNATIVES**

Supply a summary of non-discharging alternatives considered as stated in the Antidegradation Implementation Procedure Section I.B.1 and in accordance with 10 CSR 20-6.010(4)(D)1. Attach all supportive documentation in the Antidegradation Review report.

**Non-degrading alternatives:**  
 DUE TO HIGH DILUTION FACTOR, DISCHARGE OF WASTE STREAM HAS MINIMAL EFFECTS (0.27% INCREASE IN FECAL CONCENTRATION AND 0.04% DECREASE IN E COLI CONCENTRATION) ON IN-STREAM POC LEVELS AND DOES NOT DEGRADE THE STREAM OR ALTER ITS AVAILABLE USES.

**5. PROPOSED PROJECT SUMMARY**

CONSTRUCTION OF RECIRCULATING SAND FILTER DISCHARGING TO HEADWATER DIVERSION CHANNEL SEEM TO BE MINIMALLY DEGRADING AND IS THE SELECTED COURSE OF TREATMENT FOR DOMESTIC WASTEWATER COLLECTED IN WHITewater AND ALLENVILLE, MISSOURI.

Attach the Antidegradation Review report and all supporting documentation.

MSR/PS 2004 (01/09)



STANDARD CONDITIONS FOR NPDES PERMITS  
ISSUED BY  
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES  
MISSOURI CLEAN WATER COMMISSION  
REVISED  
NOVEMBER 1, 2013

These Standard Conditions incorporate permit conditions as required by 40 CFR 122.41 or other applicable state statutes or regulations. These minimum conditions apply unless superseded by requirements specified in the permit.

## Part I – General Conditions

### Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
  - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
  - b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
2. **Monitoring Requirements.**
  - a. Records of monitoring information shall include:
    - i. The date, exact place, and time of sampling or measurements;
    - ii. The individual(s) who performed the sampling or measurements;
    - iii. The date(s) analyses were performed;
    - iv. The individual(s) who performed the analyses;
    - v. The analytical techniques or methods used; and
    - vi. The results of such analyses.
  - b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.
3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.
4. **Test Procedures.** The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is “sufficiently sensitive” when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility’s discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.
5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee’s sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

6. **Illegal Activities.**
  - a. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or both.
  - b. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

### Section B – Reporting Requirements

1. **Planned Changes.**
  - a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
    - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
    - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1);
    - iii. The alteration or addition results in a significant change in the permittee’s sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
    - iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.
2. **Twenty-Four Hour Reporting.**
  - a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.



STANDARD CONDITIONS FOR NPDES PERMITS  
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MISSOURI CLEAN WATER COMMISSION  
REVISED  
NOVEMBER 1, 2013

- b. The following shall be included as information which must be reported within 24 hours under this paragraph.
    - i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
    - ii. Any upset which exceeds any effluent limitation in the permit.
    - iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
  - c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.
3. **Sanitary Sewer Overflow Reporting.** The following requirements solely reflect reporting obligations, and reporting does not necessarily reflect noncompliance, which may depend on the circumstances of the incident reported.
- a. **Twenty-Four Hour (24-Hour) Reporting.** The permittee or owner shall report any incident in which wastewater escapes the collection system such that it reaches waters of the state or it may pose an imminent or substantial endangerment to the health or welfare of persons. Relevant information shall be provided orally or via the current electronic method approved by the Department within 24 hours from the time the permittee becomes aware of the incident. A written submission shall also be provided within five (5) business days of the time the permittee or owner becomes aware of the incident. The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. The five (5) day reports may be provided via the current electronic method approved by the Department.
  - b. **Incidents Reported via Discharge Monitoring Reports (DMRs).** The permittee or owner shall report any event in which wastewater escapes the collection system, which does not enter waters of the state and is not expected to pose an imminent or substantial endangerment to the health or welfare of persons, which occur typically during wet weather events. Relevant information shall be provided with the permittee's or owner's DMRs.
4. **Anticipated Noncompliance.** The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.
5. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.
6. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, 4, and 7 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.
7. **Other Information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.
8. **Discharge Monitoring Reports.**
- a. Monitoring results shall be reported at the intervals specified in the permit.
  - b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
  - c. Monitoring results shall be reported to the Department no later than the 28<sup>th</sup> day of the month following the end of the reporting period.

## Section C – Bypass/Upset Requirements

1. **Definitions.**
  - a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility.
  - b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
  - c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
2. **Bypass Requirements.**
  - a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.
  - b. Notice.
    - i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
    - ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
  - c. Prohibition of bypass.
    - i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
      1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
      2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
      3. The permittee submitted notices as required under paragraph 2. b. of this section.
    - ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.
3. **Upset Requirements.**
  - a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
  - b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
    - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
    - ii. The permitted facility was at the time being properly operated; and
    - iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
    - iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
  - c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.



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NOVEMBER 1, 2013

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
  - a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
  - b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
  - c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.
  - d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed \$10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.
2. **Duty to Reapply.**
  - a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
  - b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
  - c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
5. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
6. **Permit Actions.**
  - a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
    - i. Violations of any terms or conditions of this permit or the law;
    - ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
    - iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
    - iv. Any reason set forth in the Law or Regulations.
  - b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.



STANDARD CONDITIONS FOR NPDES PERMITS  
ISSUED BY  
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES  
MISSOURI CLEAN WATER COMMISSION  
REVISED  
NOVEMBER 1, 2013

7. **Permit Transfer.**
  - a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
  - b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
  - c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.
10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.
11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
  - a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
  - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
  - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
  - d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.
12. **Closure of Treatment Facilities.**
  - a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
  - b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.
13. **Signatory Requirement.**
  - a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
  - b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

**STANDARD CONDITIONS FOR NPDES PERMITS  
ISSUED BY  
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES  
MISSOURI CLEAN WATER COMMISSION  
Revised  
October 1, 1980**

**PART II - SPECIAL CONDITIONS - PUBLICLY OWNED  
TREATMENT WORKS  
SECTION A - MAJOR CONTRIBUTING INDUSTRY**

**1. Definitions**

Definitions as set forth in the Missouri Clean Water Laws and Missouri Clean Water Commission Definition Regulation 10 CSR 20-2.010 shall apply to terms used herein, in addition to the following:

- a. A "major contributing industry" to a publicly owned treatment facility is a wastewater source that meets any one of the following criteria:
  - (1) has a flow of 50,000 gallons or more per average workday;
  - (2) has an average daily flow greater than five percent (5%) of the flow carried by the system receiving the waste;
  - (3) has in its waste a toxic pollutant in toxic amounts as defined in standards issued under Section 307(a) of the Federal Water Pollution Control Act (hereinafter the Act), or
  - (4) has significant impact, either singly or in combination with other contributing industries, on the treatment works or in the quality of its effluent.
- b. "Compatible pollutants" are biochemical oxygen demand, suspended solids, pH, and fecal coliform bacteria, plus additional pollutants, e.g., nitrogen or phosphorus, identified in the NPDES permit, if the publicly owned treatment facility was designed to treat such pollutants, approved by the Department and in fact does remove such pollutants to design specifications.
- c. An "incompatible pollutant" is any pollutant which is not a compatible pollutant as defined above.

**2. Industrial Effluent Monitoring**

The permittee shall establish and implement a procedure to periodically or regularly obtain monitoring data on the quality and quantity of all effluents introduced by each major contributing industry. Frequency of monitoring shall be subject to approval by the Department.

**3. Industrial Users Report**

Each permittee which has a major contributing industry shall also submit to the permit-issuing authority semi-annual reports summarizing all major contributing industries subject to the pretreatment requirements of the Missouri Clean Water Law and Regulations (hereinafter the Law and Regulations), or Section 307 of the Act. These reports must be filed with the Department of Natural Resources, PO Box 176, 205 Jefferson Street, Jefferson City,

Missouri 65102 by January 1 and July 1 of each year. Such a report shall include at least the following information:

- a. name and number of major contributing industries using the treatment works and the waste type, raw materials usage (lbs/day or kg/day), and average daily flow for each industry;
- b. summary of monitoring data obtained in accordance with Standard Conditions Part II, Section A.2 above, detailing the quality and quantity of all effluents introduced by each major contributing industry, and the frequency of monitoring performed;
- c. number of major contributing industries in full compliance with the requirements of the Law and Regulations and Section 307 of the Act or not subject to these requirements (e.g., discharge only compatible pollutants), and
- d. a list identifying by name those major contributing industries presently in violation of the requirements of the Law and Regulations and Section 307 of the Act (e.g., discharges pollutant which interferes with, passes through or is incompatible with the municipal treatment works).

**4. Report on Pollutant Introduction**

The permittee shall give notice to the department of any new introduction of pollutants or any substantial change in the character or volume of pollutants already being introduced. Such notice shall include:

- a. the origin, quality, and quantity of pollutants to be introduced into the publicly owned treatment works; and
- b. any anticipated impact on the quality and quantity of the effluent to be discharged by such treatment works;
- c. any anticipated impact on the quality of sludge produced by such treatment works causing the sludge to be hazardous under Federal and State Law.

**5. Industrial Users Compliance Schedules**

The permittee shall identify any introduction of pollutants into the facility subject to pretreatment standards under Section 307(b) of the Federal Clean Water Act. In addition, the permittee shall require any industrial user of such treatment works to comply with the requirements of Section 204(b), 307, and 308 of the Federal Clean Water Act. As a means of compliance from each industrial user, subject to the requirements of Section 307 of the Federal Clean Water Act and shall forward to the Department a copy of periodic notice, over intervals not to exceed nine (9) months, of progress towards full compliance with Section 307 requirements.

**STANDARD CONDITIONS FOR NPDES PERMITS  
ISSUED BY  
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES  
MISSOURI CLEAN WATER COMMISSION  
AUGUST 15, 1994**

**PART III – SLUDGE & BIOSOLIDS FROM DOMESTIC WASTEWATER TREATMENT FACILITIES**

**SECTION A – GENERAL REQUIREMENTS**

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation and incorporates applicable federal sludge disposal requirements under 40 CFR 503. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFS 503 until such time as Missouri is delegated the new EPA sludge program. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address federal requirements.
2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW) and privately owned facilities.
3. Sludge and Biosolids Use and Disposal Practices.
  - a. Permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
  - b. Permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
  - c. Permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
  - d. A separate operating permit is required for each operating location where sludge or biosolids are generated, stored, treated, or disposed, unless specifically exempted in this permit or in 10 CSR 20, Chapter 6 regulations. For land application, see section H, subsection 3 of these standard conditions.
4. Sludge Received From Other Facilities
  - a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
  - b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge.
  - c. Sludge received from out-of-state generators shall receive prior approval of the permitting authority and shall be listed in the facility description or special conditions section of the permit.
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after du process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act or under Chapter 644 RsMo.
8. In addition to the STANDARD CONDITIONS, the department may include sludge limitations in the special conditions portion or other sections of this permit.
9. Alternate Limits in Site Specific Permit.

Where deemed appropriate, the department may require an individual site specific permit in order to authorize alternate limitations:

  - a. An individual permit must be obtained for each operating location, including application sites.
  - b. To request a site specific permit, an individual permit application, permit fees, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the department, as follows:
  - a. The department will prepare a permit modification and follow permit public notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owners of property located adjacent to each land application site, where appropriate.
  - b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.
11. Compliance Period  
Compliance shall be achieved as expeditiously as possible but no later than the compliance dates under 40 CFR 503.2.

## **SECTION B – DEFINITIONS**

1. Biosolids means an organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge. Untreated sludge or sludge that does not conform to the pollutants and pathogen treatment requirements in this permit is not considered biosolids.
2. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
3. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
4. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
5. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a public owned treatment works (POTW) or privately owned facility.
6. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include unaerated wastewater treatment lagoons and constructed wetlands for wastewater treatment.
7. Operating location as defined in 10 CSR 20-2.010 is all contiguous lands owned, operated or controlled by one (1) person or by two (2) or more persons jointly or as tenants in common.
8. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the next growing season after biosolids application.
9. Sinkhole is a depression in the land surface into which surface water flows to join an underground drainage system.
10. Site Specific Permit is a permit that has alternate limits developed to address specific site conditions for each land application site or storage site.
11. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks.
12. Sludge lagoon is an earthen basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
13. Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamp, marshes, bogs, and similar areas. Wetlands do not include constructed wetlands used for wastewater treatment.

## **SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES**

1. Sludge shall be routinely removed from the wastewater treatment facilities and handled according to the permit facility description and sludge conditions in this permit.
2. The permittee shall operate the facility so that there is no sludge loss into the discharged effluent in excess of permit limits, no sludge bypassing, and no discharge of sludge to waters of the state.
3. Mechanical treatment plants shall have separate sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove sludge from these storage compartments on the required design schedule is a violation of this permit.

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

1. This section applies to permittees that haul sludge to another treatment facility for disposal or use contract haulers to remove and dispose of sludge.
2. Permittees that use contract haulers are responsible for compliance with all the terms of this permit including final disposal, unless the hauler has a separate permit for sludge or biosolids disposal issued by the department; or the hauler transports the sludge to another permitted treatment facility.
3. The permittee shall require documentation from the contractor of the disposal methods used and permits obtained by the contractor.
4. Testing of sludge, other than total solids content, is not required if sludge is hauled to a municipal wastewater treatment facility or other permitted wastewater treatment facility.

## **SECTION E – WASTEWATER TREATMENT LAGOONS AND STORMWATER RETENTION BASINS**

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

## **SECTION F – INCINERATION OF SLUDGE**

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

## **SECTION G – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS**

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

## **SECTION H – LAND APPLICATION**

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the Facility Description or special conditions section of the permit.
2. This permit replaces and terminates all previous sludge management plan approvals by the department for land application of sludge or biosolids.
3. Land application sites within a 20 mile radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless a site specific permit is required under Section A, Subsection 9.
4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
  - a. This permit does not authorize the land application of sludge except when sludge meets the definition of biosolids.
  - b. This permit authorizes “Class A or B” biosolids derived from domestic wastewater sludges to be land applied onto grass land, crop land, timber land or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
5. Public Contact Sites.

Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the department. Applications for approval shall be in the form of an engineering report and shall address priority pollutants and dioxin concentrations. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site-specific permit.

6. Agricultural and Silvicultural Sites.

In addition to specified conditions herein, this permit is subject to the attached Water Quality Guides numbers WQ 422 through 426 published by the University of Missouri, and hereby incorporated as though fully set forth herein. The guide topics are as follows:

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

### SECTION I – CLOSURE REQUIREMENTS

1. This section applies to all wastewater treatment facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees who plan to cease operation must obtain department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids, and ash. Permittee must maintain this permit until the facility is properly closed per 10 CSR 20-6.010 and 10 CSR 20-6.015.
3. Residuals that are left in place during closure of a lagoon or earthen structure shall not exceed the agricultural loading rates as follows:
  - a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
  - b. If a wastewater treatment lagoon has been in operation for 15 years or more, the sludge in the lagoon qualifies for Class B with respect to pathogens (see WQ 424, Table 3), and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B limitations. See WQ 423 and 424.
  - c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. See WQ 426 for calculation procedures. For a grass cover crop, the allowable PAN is 300 pounds/acre.
4. When closing a wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered “septage” under the similar treatment works” definition. See WQ 422. Under the septage category, residuals may be left in place as follows:
  - a. Testing for metals or fecal coliform is not required.
  - b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at the rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
  - c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If more than 100 dry tons/acre will be left in the lagoon, test for nitrogen and determine the PAN in accordance with WQ 426. Allowable PAN loading is 300 pounds/acre.
5. Residuals left within the lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berms shall be demolished, and the site shall be graded and vegetated so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoon closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed five acres in accordance with 10 CSR 20-6.200.
7. If sludge exceeds agricultural loading rates under Section H or I, a landfill permit or solid waste disposal permit shall be obtained to authorize on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.

### SECTION J – MONITORING FREQUENCY

1. At a minimum, sludge or biosolids shall be tested for volume and percent total solids on a frequency that will accurately represent sludge quantities produced and disposed.
2. Testing for land application is listed under Section H, Subsection 6 of these standard conditions (see WQ 423). Once per year is the minimum test frequency. Additional testing shall be performed for each 100 dry tons of sludge generated or stored during the year.
3. Additional testing may be required in the special conditions or other sections of the permit. Permittees receiving industrial wastewater may be required to conduct additional testing upon request from the department.
4. Monitoring requirements shall be performed in accordance with, “POTW Sludge Sampling and Analysis Guidance Document”, United States Environmental Protection Agency, August 1989, and subsequent revisions.

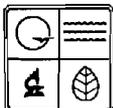
## SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in these Standard Conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
2. Reporting Period
  - a. By January 28<sup>th</sup> of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
  - b. Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.
3. Report Forms. The annual report shall be submitted on report forms provided by the department or equivalent forms approved by the department.
4. Report shall be submitted as follows:  
Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the department and EPA. Other facilities need to report only to the department. Reports shall be submitted to the addresses listed as follows:

DNR regional office listed in your permit  
(See cover letter of permit)

EPA Region VII  
Water Compliance Branch (WACM)  
Sludge Coordinator  
901 N 5<sup>th</sup> Street  
Kansas City, KS 66101

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



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
 WATER PROTECTION PROGRAM  
**FORM B: APPLICATION FOR AN OPERATING PERMIT FOR DOMESTIC OR  
 MUNICIPAL WASTEWATER (≤100,000 gallons per day)**

AP168K 012338

FOR AGENCY USE ONLY	
CHECK NUMBER	<i>No Payment received dm</i>
DATE RECEIVED	9-30-13
FEE SUBMITTED	0

**PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM**

**1. THIS APPLICATION IS FOR:**

An operating permit for a new (including antidegradation review) or unpermitted facility. Construction Permit # CP0000701

An operating permit renewal: Permit #MO- \_\_\_\_\_ Expiration Date \_\_\_\_\_

An operating permit modification: Permit #MO- \_\_\_\_\_ Reason: \_\_\_\_\_

1.1 Is the appropriate fee included with the application (see instructions for appropriate fee)?  YES  NO

1.2 Is a facility description included with this application (see 7.1)?  YES  NO

**2. FACILITY**

NAME Whitewater and Allenville Wastewater Treatment Plant		TELEPHONE NUMBER WITH AREA CODE (573) 576-5966	
ADDRESS (PHYSICAL) Whitewater & Penney Street	CITY Allenville (Chaffee)	STATE MO	ZIP CODE 63740

OUTFALL NUMBER  
For multiple outfalls, this is number \_\_\_\_\_ of \_\_\_\_\_

Estimated (actual) flow: \_\_\_\_\_ gpd, Design Average Flow: 21300 gpd, Design Peak Hourly Flow: 4800 gph

2.1 Legal description: ¼, SE ¼, SE ¼, Sec. 31, T 30, R 12E County Cape

2.2 UTM Coordinates Easting (X): \_\_\_\_\_ Northing (Y): \_\_\_\_\_  
*For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)*

2.3 Name of receiving stream: Headwater Diversion Channel

**3. OWNER**

NAME Whitewater & Allenville Combined Water and Wastewater Coop		E-MAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE (573) 576-5966
ADDRESS P.O. Box 108	CITY Jackson	STATE MO	ZIP CODE 63755

3.1 Request review of draft permit prior to public notice?  YES  NO

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

NAME Same		E-MAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
ADDRESS	CITY	STATE	ZIP CODE

**5. OPERATOR**

NAME Greg	CERTIFICATE NUMBER 10423
E-MAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE 573-579-6315

**6. FACILITY CONTACT**

NAME Erie Foster	TITLE Chairman
E-MAIL ADDRESS eriefoster@hotmail.com	TELEPHONE NUMBER WITH AREA CODE 573-576-5966

**7. DESCRIPTION OF FACILITY**

7.1 Describe the facility (attach additional sheet if required) and attach a flow chart showing the influents, treatment facilities and outfalls.  
 Recirculating gravel filter with 42,600 gallon septic tank, 21,300 gallon recirculation tank, 277 gpm dosing pumps, and 70 feet by 76 feet recirculating filter bed. Effluent is disinfected with UV system and measured with ultrasonic flow meter. Effluent pump station equipped with one gravity line and one 148 gpm pump.

7.2 Attach an aerial photograph or USGS topographic map showing the location of the facility and outfall.

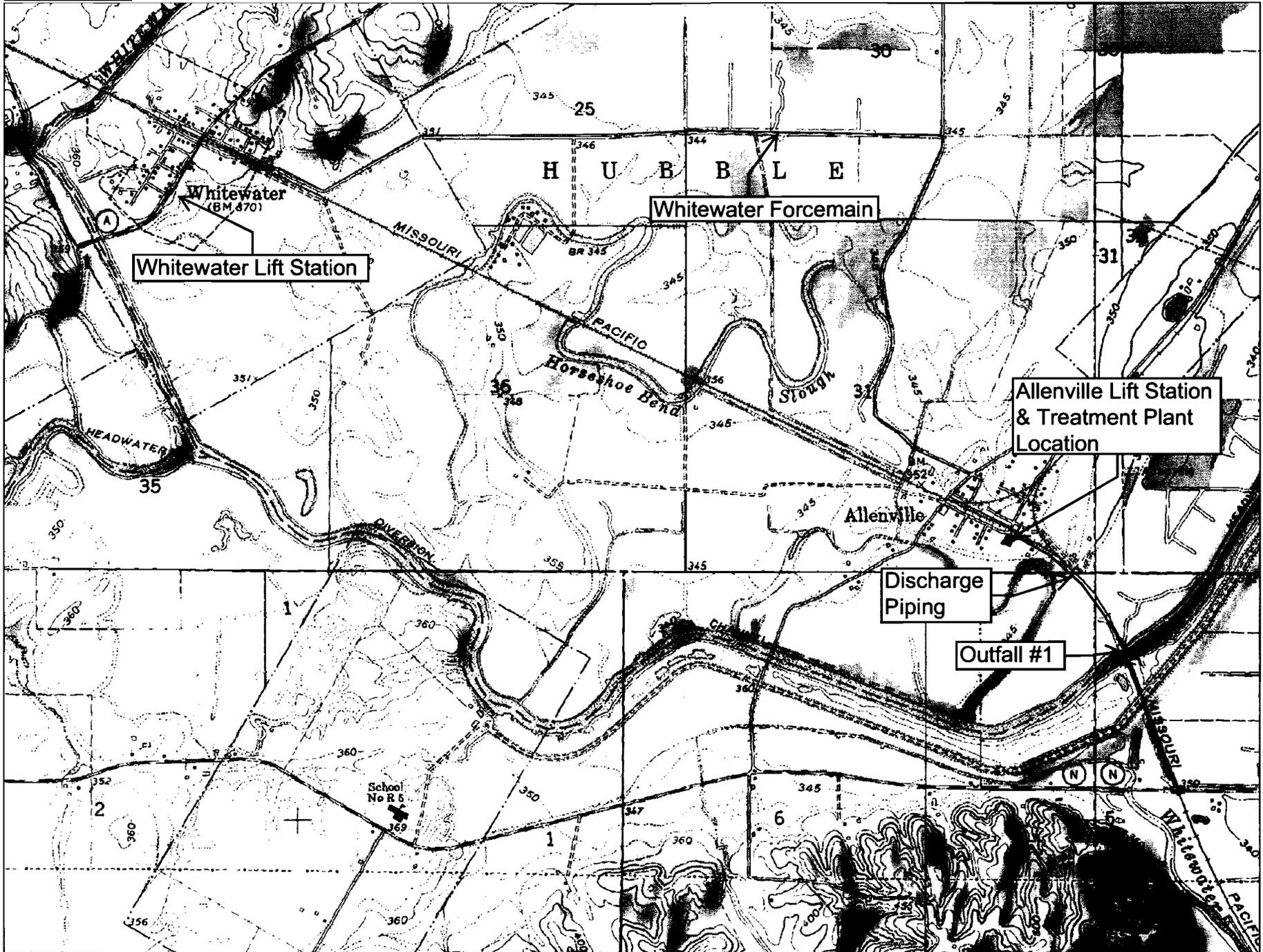
7.3 Design flow for this outfall: 21300 Total design flow for the facility: 2130 Actual flow for this outfall: \_\_\_\_\_

7.4 Number of people presently connected or population equivalent (P.E.): 260 Design P.E.: 304

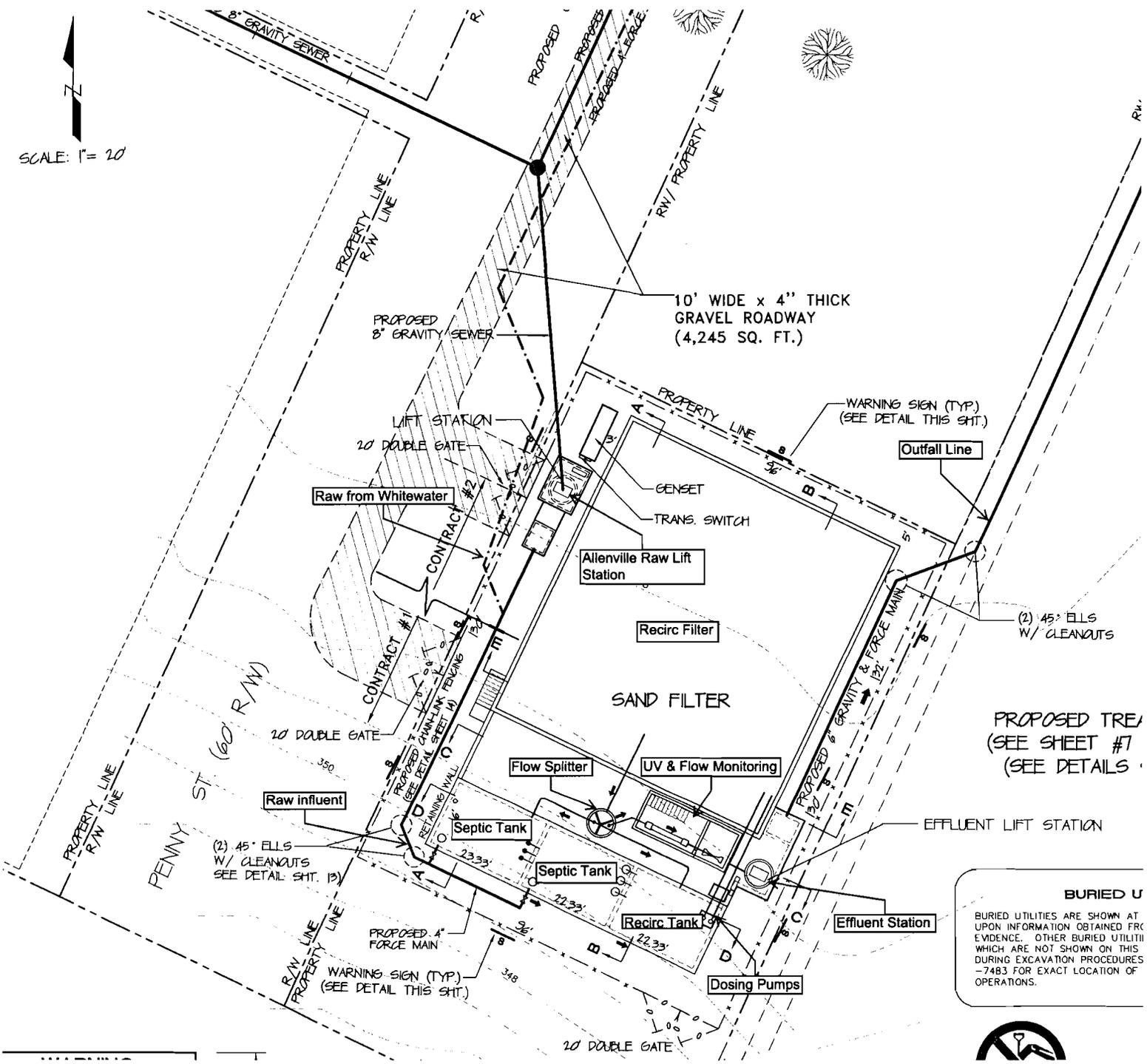
7.5 Does the facility accept or process leachate from landfills?  Yes  No

DECEMBER 11 2013  
 SEP 30 2013  
 By \_\_\_\_\_

<b>11. SLUDGE HANDLING, USE AND DISPOSAL</b>			
11.1 Is the sludge a hazardous waste as defined by 10 CSR 25? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Sludge production, including sludge received from others: <u>4.56</u> Design Dry Tons/Year    _____ Actual Dry Tons/Year			
11.3 Capacity of sludge holding structures:			
Sludge storage provided: _____ cubic feet; _____ days of storage; _____ average percent solids of sludge;			
<input checked="" type="checkbox"/> No sludge storage is provided.			
Type of Storage:		<input type="checkbox"/> Holding tank	<input type="checkbox"/> Building
<input type="checkbox"/> Basin		<input type="checkbox"/> Other (Please describe) _____	
<input type="checkbox"/> Concrete Pad			
Sludge Treatment:			
<input type="checkbox"/> Anaerobic Digester	<input type="checkbox"/> Lagoon	<input type="checkbox"/> Composting	
<input type="checkbox"/> Storage Tank	<input type="checkbox"/> Aerobic Digester	<input type="checkbox"/> Other (Attach description)	
<input type="checkbox"/> Lime Stabilization	<input type="checkbox"/> Air or Heat Drying		
Sludge Use or Disposal:			
<input type="checkbox"/> Land Application		<input type="checkbox"/> Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years)	
<input checked="" type="checkbox"/> Contract Hauler	<input type="checkbox"/> Incineration		
<input type="checkbox"/> Hauled to Another	<input type="checkbox"/> Sludge Retained in Wastewater treatment lagoon		
Treatment Facility	<input type="checkbox"/> Other _____ Attach explanation sheet.		
<input type="checkbox"/> Solid Waste Landfill			
Person responsible for hauling sludge to disposal facility			
<input type="checkbox"/> By Applicant		<input checked="" type="checkbox"/> By Others (complete below)	
NAME		E-MAIL ADDRESS	
Unknown at this time. New facility			
ADDRESS	CITY	STATE	ZIP CODE
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.	
		MO-	
Sludge use or disposal facility			
<input type="checkbox"/> By applicant		<input type="checkbox"/> By others (Please complete below.)	
NAME		E-MAIL ADDRESS	
ADDRESS	CITY	STATE	ZIP CODE
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.	
		MO-	
Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    (Please explain)			
<b>12. DOWNSTREAM LANDOWNERS - ATTACH ADDITIONAL SHEETS AS NECESSARY. SEE INSTRUCTIONS.</b>			
NAME			
Quade Family Trust			
ADDRESS	CITY	STATE	ZIP CODE
1950 County Road 241	Chaffee	MO	63740
<b>13. CERTIFICATION</b>			
I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law.			
NAME AND OFFICIAL TITLE (TYPE OR PRINT)		TELEPHONE NUMBER WITH AREA CODE	
Erie Foster, Chairman		(573) 576-5966	
SIGNATURE		DATE SIGNED	
		9/25/13	



SCALE: 1" = 20'



PROPOSED TREE  
(SEE SHEET #7  
(SEE DETAILS

**BURIED UTILITIES**  
BURIED UTILITIES ARE SHOWN AT UPON INFORMATION OBTAINED FROM EVIDENCE. OTHER BURIED UTILITIES WHICH ARE NOT SHOWN ON THIS DURING EXCAVATION PROCEDURES -7483 FOR EXACT LOCATION OF OPERATIONS.

