

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

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

Permit No. MO-0097993

Owner: Missouri Department of Natural Resources
Address: PO Box 176, Jefferson City, MO 65102

Continuing Authority: Missouri Department of Natural Resources, Division of State Parks
Address: PO Box 176, Jefferson City, MO 65102

Facility Name: MDNR, St. Joe State Park
Facility Address: 2800 Pimville Road, Park Hills, MO 63601

Legal Description: See Page 2
UTM Coordinates: See Page 2

Receiving Stream: See Page 2
First Classified Stream and ID: See Page 2
USGS Basin & Sub-watershed No.: See Page 2

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

FACILITY DESCRIPTION

See Page 2

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

June 17, 2011 March 4, 2015
Effective Date Modification Date


Sara Parker Pauley, Director, Department of Natural Resources

June 16, 2016
Expiration Date


John Madras, Director, Water Protection Program

FACILITY DESCRIPTION (continued)

Outfall #001 – State Park - SIC #4952

Three cell lagoon/sludge is retained in lagoon or land applied.
Design population equivalent is 127.
Design flow is 5,500 gallons per day. Actual flow is 2,000 gallons per day
Design sludge production is 1.9 dry tons/year.
Legal Description: NE ¼, NE ¼, Sec. 30, T36N, R5E, St. Francois County
Latitude/Longitude: X = 718735, Y = 4187084
Receiving Stream: Harris Branch (U)
First Classified Stream and ID: Flat River Creek (C) 02168
USGS Basin & Sub-watershed No. 07140104-010005

Outfall #002 – State Park – SIC #7999

Stormwater runoff/lead mine tailings. Outfall #002 is Shaw Branch just before the culvert under Highway 32
Actual Flow is dependent on precipitation.
Legal Description: U.S. Survey 3272, T36N, R5E, St. Francois County
Latitude/Longitude: X = 718456, Y = 4191133
Receiving Stream: Shaw Branch (C)
First Classified Stream and ID: Shaw Branch (C) 02170 303d list
USGS Basin & Sub-watershed No. 07140104-010005

Outfall #003 - This outfall was eliminated because the source area is remediated

INSTREAM MONITORING POINT S1: Eliminated

INSTREAM MONITORING POINT S3: Eliminated

A-1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 3 of 7	
					PERMIT NUMBER MO-0097993	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until four (4) years 364 days after the effective date of this permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Flow	MGD	*		*	once/quarter ¹	24 hr. total
Biochemical Oxygen Demand ₅	mg/L		65	45	once/quarter ¹	grab
Total Suspended Solids	mg/L		120	80	once/quarter ¹	grab
pH – Units	SU	***		***	once/quarter ¹	grab
Ammonia as N	mg/L	*		*	once/quarter ¹	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>October 28, 2011</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A-2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PERMIT NUMBER MO-0097993	
					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 five (5) years after issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:	
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Flow	MGD	*		*	once/quarter ¹	24 hr. total
Biochemical Oxygen Demand ₅	mg/L		65	45	once/quarter ¹	grab
Total Suspended Solids	mg/L		120	80	once/quarter ¹	grab
pH – Units	SU	**		**	once/quarter ¹	grab
Ammonia as N (April 1 – Sept 30) (Oct 1 – March 31)	mg/L				once/quarter ¹	grab
		3.8		1.4		
		7.5		2.9		
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>October 28, 2014</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged. Outfall 001 pH is limited to the range of 6.5-9.0 pH units.

¹ See table below for quarterly sampling.

Minimum Sampling Requirements			
Quarter	Months	Effluent Parameters	Report is Due
First	January, February, March	Sample at least once during any month of the quarter	April 28 th
Second	April, May, June	Sample at least once during any month of the quarter	July 28 th
Third	July, August, September	Sample at least once during any month of the quarter	October 28 th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28 th

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect for two (2) years and 364 days. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #002 (Note 1)						
Flow	MGD	*		*	once/month	24 hr estimate
Settleable Solids	mL/L	*		*	once/ month	grab
Total Suspended Solids	mg/L	*		*	once/ month	grab
Lead, Total Recoverable	µg/L	*		*	once/ month	grab
Zinc, Total Recoverable	µg/L	*		*	once/ month	grab
Cadmium, Total Recoverable	µg/L	*		*	once/ month	grab
pH – Units	SU	*		*	once/ month	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE October 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

* Monitoring requirement only.

Note 1 – Stormwater discharges from Outfall #002 are subject to benchmarks see Special Condition #8.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri’s Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri’s list of waters of the state not fully achieving the state’s water quality standards, also called the 303(d) list. The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
2. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge of domestic wastewater by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.
4. Changes in Discharges of Toxic Substances

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

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
 - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
5. Report as no-discharge when a discharge does not occur during the report period.
6. Water Quality Standards
- (a) To the extent required by law, discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
 - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.
7. The permittee shall develop and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP shall address stormwater at the park both pre and post reclamation activities. The SWPPP must be kept on-site and should not be sent to the Department unless specifically requested. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document: 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.

The SWPPP must include the following:

- (a) An assessment of all stormwater discharges associated with this facility. This must include a list of potential contaminants found on site.
- (b) A listing of specific Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter stormwater.
- (c) The SWPPP must include a schedule for monthly site inspections and a brief written report. The inspections must include observation and evaluation of BMP effectiveness, deficiencies, and corrective actions that will be taken. Deficiencies that consist of minor repairs or maintenance must be corrected within seven (7) days. Deficiencies that require additional time or installation of a treatment device to correct shall be detailed in a written notification. Inspection and corrective action reports must be kept on site with the SWPPP. These must be made available to Department personnel upon request.
- (d) A provision for designating an individual to be responsible for environmental matters.
- (e) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of the Department.

The purpose of the SWPPP and the BMPs listed therein is to prevent pollutants from entering waters of the state. A deficiency of a BMP means it was not effective in preventing pollution [10 CSR20-2.010(56)] of waters of the state, or failed to achieve compliance with benchmarks. Corrective action means the facility took steps to eliminate the deficiency.

8. This permit stipulates pollutant benchmarks applicable to your discharge. The benchmarks do not constitute direct numeric effluent limitations; therefore, a benchmark exceedance alone is not a permit violation. Benchmark monitoring and visual inspections shall be used to determine the overall effectiveness of the SWPPP. The dissolved lead benchmarks are included to determine compliance with the assumptions and requirements of the Big River, Flat River Creek and Shaw Branch TMDL. If a sample exceeds a benchmark concentration you must review your SWPPP and your BMPs to determine what improvements or additional controls are needed to reduce that pollutant in your stormwater discharge(s).

Outfall #002	
Parameter	Daily Maximum Benchmark
Settleable Solids	1.0 mL/L/hr
TSS	5 mg/L
Lead, Total Recoverable	188 µg/L
Lead, Dissolved	136 µg/L
Zinc, Total Recoverable	209 µg/L
Cadmium, Total Recoverable	10 µg/L
pH	6.5 – 9.0

Outfall #002	
Parameter	Monthly Average Benchmark
Lead, Dissolved	5 µg/L

9. Progress toward benchmark values shall be evaluated annually. The permittee shall submit annual reports detailing progress toward achieving benchmarks every 12 months from the modification date of this permit. The annual report shall include:
- a) A summary of data collected during the previous year.
 - b) A detailed description of BMPs and corrective actions implemented.
 - c) An analysis of progress toward achieving benchmarks and the effectiveness of BMPs.
10. The permittee shall submit a plan to address any deficiencies in achieving benchmark values 180 days prior to expiration of the permit with the renewal application. The plan shall include an implementation schedule for additional BMPs and methods for evaluation of BMPs.

D. SCHEDULE OF COMPLIANCE

The facility shall attain compliance with final effluent limitations for ammonia as soon as reasonably achievable or no later than **5 years** of the effective date of this permit.

1. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits every 12 months from issuance date.

Please submit progress reports to the Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Boulevard, Missouri, 63901.

Missouri Department of Natural Resources
STATEMENT OF BASIS
FOR THE PURPOSE OF MODIFICATION
OF
MO-0097993
MISSOURI DEPARTMENT OF NATURAL RESOURCES, ST. JOE STATE PARK

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 stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

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

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

This Factsheet is for a Minor

Part I – Facility Information

Facility Address: 2800 Pimville Rd, Park Hills, MO 63601
Facility Type: State Park with domestic wastewater and stormwater discharges.
Facility SIC Code(s): 4952 and 7999

Facility Description:

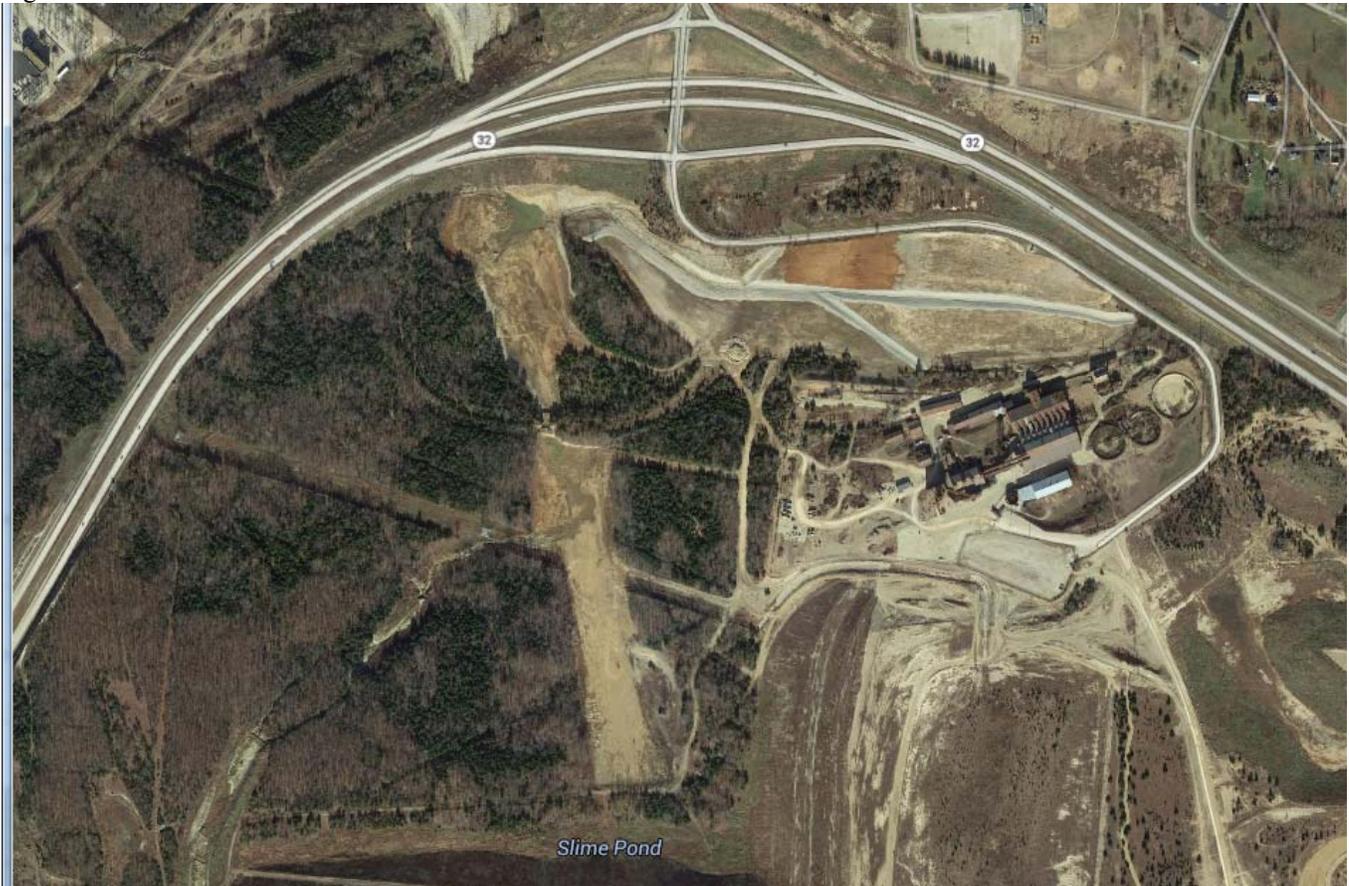
This permit is for a state park owned by the State of Missouri. This park features off-road vehicle recreation as a major attraction. The facility is located in the "Old Lead Belt" region of southeast Missouri. St. Joe State Park is located on the Federal Lead Company mine tailings impoundment which is the source of the Shaw Branch impairment and a Superfund site. This permit is the chosen method for assuring that the Superfund site meets all of the applicable clean water rules and regulations.

In response to an EPA Administrative Settlement Agreement and Order on Consent for Removal Action, portions of the site with soil lead contamination in excess of 600 ppb (human health criteria) have either been allowed to vegetate or were covered with mine screenings that meet the human health criteria. The screenings are compacted to create a stable cap. Many areas that met the human health criteria are open to off-road vehicle recreational uses. That effort was not sufficient to meet the applicable water quality standards. Ongoing remediation efforts are focused on stormwater management. This includes rock channels to collect stormwater runoff and exclude tailings (see Figure 1). In 2014, The Doe Run Company, in cooperation with the department hired Barr Engineering to install two stormwater retention basins (see Figure 2). At the time of this modification the site has not been completely stabilized and revegetated, so the effectiveness of this project on improving water quality cannot be determined.

Figure 1. Stormwater channels on tailings impoundment.

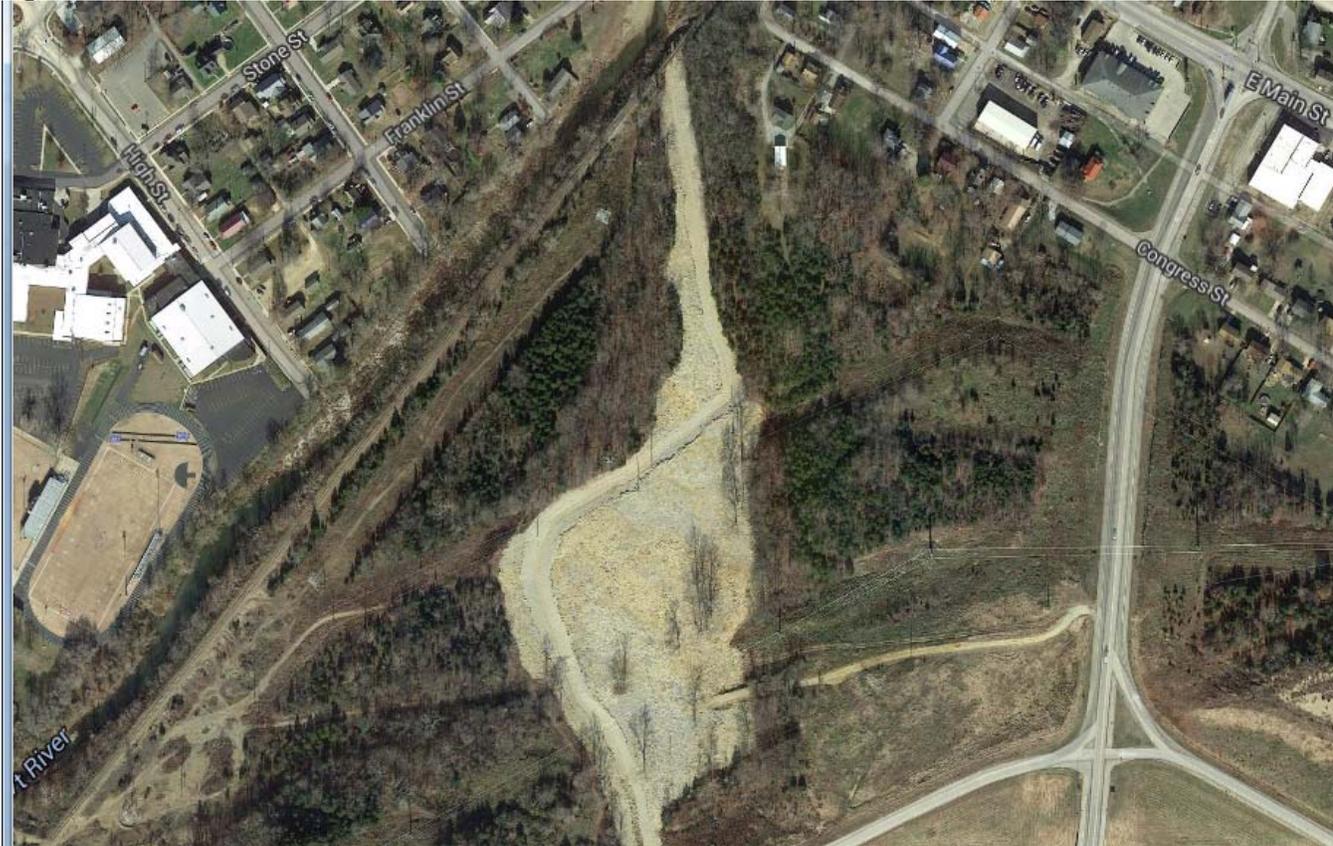


Figure 2. Stormwater retention basins



The stabilization project continued downstream of the retention basins where tailings lining the stream bed were capped with additional rock (see Figure 3). No natural stream channel or habitat remains in the area that was Shaw Branch. However, more retention and infiltration are accomplished in this constructed channel.

Figure 3. Stormwater channel established over former Shaw Branch channel.



Receiving Stream Conditions

The facility is located in the Shaw Branch watershed. Shaw Branch is a tributary to Flat River Creek, which flows into the Big River. On March 24, 2010 EPA approved a TMDL for Big River, Flat River Creek and Shaw Branch.

Basis for Modification

This permit was renewed in 2011; at that time the wasteload allocations established in the TMDL were used to derive effluent limitations. The derivation of the previous limits used methods and statistics described in EPA's Technical Support Document for Water Quality Based Toxics Control.

PART II – FACILITY INFORMATION

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.

- ✓ Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.

The Department determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b). The previous permit limits were established in error, based on the methods and statistics described in EPA's Technical Support Document (TSD) for Water Quality Based Toxics Control. The methods established in the TSD are based on continuous discharges from a wastewater treatment plant. This facility has intermittent discharges from a stormwater outfall. This renewal establishes limits appropriate for stormwater discharges and consistent with EPA's November 26, 2014 Memo on Establishing TMDL WLAs for Stormwater Sources and NPDES permit requirements based on those WLAs. The benchmark concentrations require corrective actions are consistent with the assumptions and requirements of the applicable TMDL.

http://water.epa.gov/polwaste/npdes/stormwater/upload/EPA_SW_TMDL_Memo.pdf

Outfall #002– Stormwater

Benchmarks derived and established in the Effluent Limitations Table have been established to assess whether the Outfall #002 discharges are compliant with the applicable water quality standards and the assumptions and requirements of the Big River, Flat River Creek and Shaw Branch TMDL. Benchmark exceedances indicate the need to implement corrective actions to meet the permit requirements. Benchmark exceedance alone is not a permit violation. Failure to take action is a permit violation. This permit establishes a schedule to assess benchmarks on an annual basis. At the end of each year a plan should be developed to demonstrate tangible progress during the next year.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	DAILY MAXIMUM BENCHMARK	MONTHLY AVERAGE BENCHMARK	MODIFIED	PREVIOUS PERMIT EFFLUENT LIMITATIONS
FLOW	GPD	*	*	NO	*
SETTLABLE SOLIDS	MG/L/HR	1.0	*	YES	1.0/1.0
TSS	MG/L	5	8	YES	5/5
pH	SU	6.5-9.0		YES	6.5-9.0
ZINC, TOTAL RECOVERABLE	µg/L	209		YES	207.7/103.5
CADMIUM, TOTAL RECOVERABLE	µg/L	10		YES	0.75/0.37
LEAD, DISSOLVED	µg/L	136	5	YES	**
LEAD, TOTAL RECOVERABLE	µg/L	188	7	YES	12.44/6.2

* - Monitoring requirement only.

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

OUTFALL #002 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Total Suspended Solids.** Consistent with the assumptions and requirements of the applicable TMDL to achieve a 98% reduction a daily maximum benchmark goal of 5 mg/L is established in this modification.

Flow (cfs)	MGD	WLA kg/d	WLA mg/L
0.23	0.148387	2.9	5
0.31	0.2	3.8	5
0.71	0.458065	8.7	5
1.69	1.090323	20.8	5
3.7	2.387097	45.3	5
11.03	7.116129	135	5
66.57	42.94839	815	5

- **Metals** Effluent limitations for total recoverable metals were derived from Missouri’s water quality standards for the protection of aquatic life and “The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and a water hardness of 200 mg/L is used in the conversion below. Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the Department, partitioning evaluations may be considered and site-specific translators developed.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Cadmium	0.915	0.880
Lead	0.690	0.690
Zinc	0.980	0.986

Conversion factors for Cd, Zn and Pb are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 200 mg/L. 40 CFR 122.45(c) requires permit limits to be expressed as total recoverable; however, this facility discharges to a receiving stream with a wasteload allocation expressed as dissolved lead. Therefore, a total recoverable lead benchmark is established in compliance with 40 CFR 122.45(c) and 10 CSR 20.7031, while a dissolved lead benchmark is also included to measure progress toward the TMDL's wasteload allocation.

- **Cadmium, Total Recoverable.** Daily Maximum Benchmark = Protection of Aquatic Life Acute Criteria = 10 µg/L.
- **Zinc, Total Recoverable.** Daily Maximum Benchmark = Protection of Aquatic Life Chronic Criteria = 209 µg/L.
- **Lead, Total Recoverable.** Daily Maximum Benchmark = Protection of Aquatic Life Chronic Criteria = 188 µg/L.
- **Lead, Dissolved.** Consistent with the assumptions and requirements of the applicable TMDL for a 98% reduction the dissolved lead water quality criteria established by the TMDL are incorporated in this permit as a daily maximum benchmark of 136 µg/L and a monthly average benchmark of 5 µg/L.

Flow (cfs)	MGD	WLA kg/d	WLA mg/L
0.23	0.148387	0.003	0.005
0.31	0.2	0.004	0.005
0.71	0.458065	0.009	0.005
1.69	1.090323	0.02	0.005
3.7	2.387097	0.05	0.006
11.03	7.116129	0.14	0.005
66.57	42.94839	0.82	0.005

Part VIII – Cost Analysis for Compliance

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

- The Department is not required to determine Cost Analysis for Compliance because the permit contains no new conditions or requirements that convey a new cost to the facility.

Part IX – Administrative Requirements

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

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing. The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The Public Notice period for this operating permit was from 01/16/2015 to 02/16/2015. Responses to the Public Notice of this operating permit warrant the modification of effluent limits and/or the terms and conditions of this permit.

DATE OF FACT SHEET: 01/02/2015

COMPLETED BY:

**AMANDA SAPPINGTON, CHIEF
INDUSTRIAL PERMITS UNIT
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
(573) 751-8728
amanda.sappington@dnr.mo.gov**

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0097993
MISSOURI DEPARTMENT OF NATURAL RESOURCES, ST. JOE STATE PARK

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 stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

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

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

This Factsheet is for a Minor

Part I – Facility Information

Facility Address: 2800 Pimville Rd, Park Hills, MO 63601
 Facility Type: POTW
 Facility SIC Code(s): 4952 and 7999

Facility Description:

This permit is for a state park owned by the State of Missouri.

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

- No.

Application Date: September 1, 2006
 Expiration Date: December 16, 2006
 Last Inspection: February 22, 2010 In Compliance ; Non-Compliance

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.008	Secondary	Sewage	2.3
002	13.4	Stormwater	Stormwater	0.0

Outfall #001 – State Park - SIC #4952

Three cell lagoon/sludge is retained in lagoon or land applied.
 Design population equivalent is 127.
 Design flow is 0.005500 MGD. Actual flow is 0.002000 MGD
 Design sludge production is 1.9 dry tons/year.
 Legal Description: NE ¼, NE ¼, Sec. 30, T36N, R5E, St. Francois County
 Latitude/Longitude: X=718735, Y=4187084
 Receiving Stream: Harris Branch (U)
 First Classified Stream and ID: Flat River Creek (C) (02168)
 USGS Basin & Sub-watershed No.: (07140104-010005)

Stormwater runoff/lead mine tailings. Outfall #002 is Shaw Branch just before the culvert under Highway 32
 Design Flow is dependent on precipitation.
 Legal Description: U.S. Survey 3272, T36N, R5E, St. Francois County
 Latitude/Longitude: X=718456, Y=4191133
 Receiving Stream: Shaw Branch (C)
 First Classified Stream and ID: Shaw Branch (C) 02170 303d list
 USGS Basin & Sub-watershed No. 07140104-010005

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

St. Joe State Park has a large tailing area that is partially controlled with tailing ponds. Big River Watershed has a TMDL for lead and total suspended solids (TSS). Shaw Branch Watershed is 27% tailings. Stormwater discharge (Outfall #002) to Shaw Branch is in non-compliance with existing effluent limitations for lead and Total Suspended Solids (TSS). Sediment and metals from this facility are impacting water quality in Shaw Branch (WBID: 2170) and reductions in daily loading are necessary.

Comments:

Based on past inspections conducted by the Department’s Southeast Regional office, the facility is not in compliance due to operation and maintenance problems.

Part II – Operator Certification Requirements

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

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.

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

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Harris Branch	U		General Criteria	07140104	Ozark/Meramec
Shaw Branch	C	02170	LWW, AQL,WBC (B)****		
Flat River Creek	C	02168	LWW, AQL,WBC (B)***		

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

** - Ecological Drainage Unit

*** - UAA conducted on 6-16-2005

**** - UAA has not been conducted.

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Harris Branch (U)	-	-	-
Shaw Branch (C)	0.0	0.0	0.1
Flat River Creek (C)	0.0	0.0	0.1

RECEIVING STREAM MONITORING REQUIREMENTS:

Previous receiving stream monitoring requirements have been removed from this permit.

Site S1 and S3 Eliminated

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

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

Not Applicable ;

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

ANTI-BACKSLIDING:

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

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

ANTIDEGRADATION:

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

- Renewal no degradation proposed and no further review necessary.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

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

BIOSOLIDS, 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. Additional information regarding biosolids and sludge is located at the following web address: <http://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

- Sludge/biosolids are removed by contract hauler or are stored in the lagoon.

COMPLIANCE AND ENFORCEMENT:

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

Applicable ;

The permittee/facility is currently under enforcement action due to due to solids and Lead.

PRETREATMENT PROGRAM:

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

Not Applicable ;

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

REASONABLE POTENTIAL ANALYSIS (RPA):

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

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

Applicable .

A RPA was conducted on appropriate parameters. Please see **APPENDIX # 1 – WATER QUALITY REVIEW SHEET.**

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm.

Not Applicable .

Influent monitoring is not 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 stormwater (i.e. I&I), to a POTW. SSSs are not designed to collect large amounts of stormwater 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.

Applicable .

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

STORMWATER 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 stormwater 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 Stormwater 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 stormwater discharges.

Applicable ;

A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan.

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. Please see **APPENDIX # 1 – WATER QUALITY REVIEW SHEET**

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

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).

Number of Samples "n":

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

WLA MODELING:

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

Applicable ;

A WLA study including model was conducted in July 2007 in conjunction with a water quality review of the outfalls associated with this facility. Please see **APPENDIX # 1 – WATER QUALITY REVIEW SHEET**

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

Applicable ;

Shaw Branch is listed on the 2002 Missouri 303(d) List for non-volatile suspended solids and lead.

– This facility is considered to be a source of or has the potential to contribute to the above listed pollutant(s).

Part V – Effluent Limits Determination

Outfall #001 – Sewage

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

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	No	*
BOD ₅	MG/L	1		65	45	No	65/45
TSS	MG/L	1		120	80	No	120/80
pH	SU	1	6.5-9.0		6.5-9.0	YES	6.0-9.0
AMMONIA AS N (April 1 – Sept 30)	MG/L	2/3/5	3.8		1.4	YES	****
AMMONIA AS N (Oct 1 – March 31)	MG/L	2/3/5	7.5		2.9	YES	****
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring requirement only.

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

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

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | 12. Antidegradation Review |

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD₅).** 65 mg/L as a Weekly Average and 45 mg/L as a Monthly Average. Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality. Therefore, effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.
- **Total Suspended Solids (TSS).** 120 mg/L as a Weekly Average and 80 mg/L as a Monthly Average. Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality. Therefore, effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.
- **pH.** Effluent limitations have been modified from previous state operating permit to be in line with 10 CSR 20-7.015(8)(A)2, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.
- **Temperature.** Monitoring requirement due to the toxicity of Ammonia varies by temperature.
- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU. No mixing considerations allowed; therefore, WLA = appropriate criterion.

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

Summer: May 1 – October 31

Chronic WLA: $C_e = ((0.0085 + 0.0)1.5 - (0.0 * 0.01)) / 0.0085$
 $C_e = 1.5 \text{ mg/L}$

Acute WLA: $C_e = ((0.0085 + 0.0)12.1 - (0.0 * 0.01)) / 0.0085$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.55 \text{ mg/L (0.780)} = \mathbf{1.2 \text{ mg/L}}$

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

$LTA_a = 12.1 \text{ mg/L (0.321)} = 3.9 \text{ mg/L}$

[CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 1.2 mg/L (3.11) = 3.75 mg/L

[CV = 0.6, 99th Percentile]

AML = 1.2 mg/L (1.19) = 1.43 mg/L

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

Winter: November 1 – April 30

Chronic WLA: $C_e = ((0.0085 + 0.0)3.1 - (0.0 * 0.01)) / 0.0085$
 $C_e = 3.1 \text{ mg/L}$

Acute WLA: $C_e = ((0.0085 + 0.0)12.1 - (0.0 * 0.01)) / 0.0085$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L (0.780)} = \mathbf{2.4 \text{ mg/L}}$

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

$LTA_a = 12.1 \text{ mg/L (0.321)} = 3.9 \text{ mg/L}$

[CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 2.4 mg/L (3.11) = 7.5 mg/L

[CV = 0.6, 99th Percentile]

AML = 2.4 mg/L (1.19) = 2.85 mg/L

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

Outfall #002– Stormwater

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

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1			*	No	*
SETTLABLE SOLIDS	MG/L/H	10	1.0		1.0	No	1.0/1.0
TSS	MG/L	1	5		5	YES	120/80
pH	SU	1			*	YES	6.0-9.0
ZINC, TOTAL RECOVERABLE	µg/L	10	207.7		103.5	YES	440/440
ZINC, DISSOLVED	µg/L	1			*	No	*
CADMIUM, TOTAL RECOVERABLE	µg/L	10	0.75		0.37	YES	17/17
CADMIUM, DISSOLVED	µg/L	1			*	No	*
LEAD, DISSOLVED	µg/L	1			*	No	*
LEAD, TOTAL RECOVERABLE	µg/L	2	13		7	Yes	29/29
HARDNESS	MG/L	1			*	No	*
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

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

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | 12. Antidegradation Review |

OUTFALL #002 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Metals** Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the “Technical Support Document For Water Quality-based Toxic Controls” (EPA/505/2-90-001) and “The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and a water hardness of 200 mg/L is used in the conversion below. Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the Department, partitioning evaluations may be considered and site-specific translators developed.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Cadmium	0.915	0.880
Lead	0.690	0.690
Zinc	0.980	0.986

Conversion factors for Cd, Zn and Pb are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 200 mg/L.

Cadmium, Total Recoverable. Protection of Aquatic Life Chronic Criteria = 0.4 µg/L, Acute Criteria = 9.33µg/L.

Chronic = 0.4/0.880 = 0.45 µg/L
Acute = 9.33/0.915 = 10.19 µg/L

Chronic WLA: $C_e = ((13.4 + 0.0)0.45 - (0.0 * 0.0))/13.4$
 $C_e = 0.45 \mu\text{g/L}$

Acute WLA: $C_e = ((13.4 + 0.0)10.19 - (0.0 * 0.0))/13.4$
 $C_e = 10.19 \mu\text{g/L}$

$LTA_c = 0.45 (0.527) = \mathbf{0.24 \mu\text{g/L}}$ [CV = 0.6, 99th Percentile]
 $LTA_a = 10.19 (0.321) = 3.3 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 0.24 (3.11) = 0.75 µg/L [CV = 0.6, 99th Percentile]
AML = 0.24 (1.55) = 0.37 µg/L [CV = 0.6, 95th Percentile, n = 4]

• **Zinc, Total Recoverable.** Protection of Aquatic Life Chronic Criteria = 193 µg/L, Acute Criteria = 211µg/L.

Chronic = 193/0.980 = 197 µg/L
Acute = 211/0.986 = 208 µg/L

Chronic WLA: $C_e = ((13.4 + 0.0)197 - (0.0 * 0.0))/13.4$
 $C_e = 197 \mu\text{g/L}$

Acute WLA: $C_e = ((13.4 + 0.0)208 - (0.0 * 0.0))/13.4$
 $C_e = 208 \mu\text{g/L}$

$LTA_c = 197 (0.527) = 103.8 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]
 $LTA_a = 208 (0.321) = \mathbf{66.8 \mu\text{g/L}}$ [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 66.8 (3.11) = 207.7 µg/L [CV = 0.6, 99th Percentile]
AML = 66.8 (1.55) = 103.5 µg/L [CV = 0.6, 95th Percentile, n = 4]

• **For Lead, Total Recoverable and Total Suspended Solids (TSS),** the chronic waste load allocation duration curve for Shaw Branch in kg/day was taken from Table 9 within the Missouri Department of Natural Resources' *Total Maximum Daily Loads (TMDLs) For Big River, Flat River Creek and Shaw Branch* (Approved 2010). Protection of Aquatic Life--Lead Chronic Criteria = 5.3 µg/L, Acute Criteria = 136 µg/L.

Chronic = 5.3/0.690 = 7.6 µg/L
Acute = 136/0.690 = 93.8 µg/L

Chronic WLA: $C_e = ((13.4 + 0.0)7.6 - (0.0 * 0.0))/13.4$
 $C_e = 7.6 \mu\text{g/L}$

Acute WLA: $C_e = ((13.4 + 0.0)93.8 - (0.0 * 0.0))/13.4$
 $C_e = 93.8 \mu\text{g/L}$

$LTA_c = 7.6 (0.527) = \mathbf{4.0 \mu\text{g/L}}$ [CV = 0.6, 99th Percentile]
 $LTA_a = 93.8 (0.321) = 30.1 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 4.0 (3.11) = 12.44 µg/L [CV = 0.6, 99th Percentile]
AML = 4.0 (1.55) = 6.2 µg/L [CV = 0.6, 95th Percentile, n = 4]

Table 9: Dissolved Lead and TSS Wasteload Allocations for Shaw Branch (WBID: 2170)

Percent of time flow is exceeded	Flow (cfs)	Dissolved Lead WLA (kg/d)	TSS WLA (kg/d)
95%	0.23	0.003	2.9
90%	0.31	0.004	3.8
70%	0.71	0.009	8.7
50%	1.69	0.02	20.8
30%	3.7	0.05	45.3
10%	11.03	0.14	135
5%	66.57	0.82	815

Flow (CFS)	Total Dissolved Lead WLA (Kg/d)	Total Recoverable Lead WLA (Kg/d)	WLA _c	LTA _c	MDL	AML
0.23	0.003	0.004	0.004	0.002	0.007	0.004
0.31	0.004	0.006	0.006	0.003	0.010	0.005
0.71	0.009	0.013	0.013	0.007	0.021	0.011
1.69	0.02	0.029	0.029	0.015	0.048	0.024
3.7	0.05	0.073	0.073	0.038	0.119	0.059
11.03	0.14	0.203	0.203	0.107	0.333	0.166
66.57	0.82	1.188	1.188	0.627	1.952	0.973

Flow (CFS)	Total Suspended Solids (TSS) WLA (Kg/d)	WLA _c	LTA _c	MDL	AML
0.23	2.9	2.9	1.5	4.8	2.4
0.31	3.8	3.8	2.0	6.2	3.1
0.71	8.7	8.7	4.6	14.3	7.1
1.69	20.8	20.8	11.0	34.2	17.0
3.7	45.3	45.3	23.9	74.4	37.1
11.03	135.0	135.0	71.2	221.8	110.5
66.57	815.0	815.0	429.9	1338.8	667.3

Assumptions and Basis:

n=4

cv=0.6

For LTA, MDL the 99th Percentile was used.

For AML, the 95th Percentile was used.

LTA multiplier = 0.527

MDL multiplier = 3.11

AML multiplier = 1.55

Hardness of 200 mg/L was used to calculate criteria for metals that are hardness dependent.

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

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

$$LTA_c = WLA_{chronic} * LTA_c \text{ multiplier}$$

$$MDL \text{ kg/d} = LTA_c * MDL \text{ multiplier}$$

$$AML \text{ kg/d} = LTA_c * AML \text{ multiplier}$$

- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit.

Part VI – Administrative Requirements

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

PUBLIC NOTICE:

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

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

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

- The Public Notice period for this operating permit is tentatively schedule to begin January 2011.

DATE OF FACT SHEET: NOVEMBER 9, 2010

COMPLETED BY:

**CHRIS WIEBERG, ENVIRONMENTAL SPECIALIST
NPDES PERMITS UNIT
PERMITTING AND ENGINEERING SECTION
WATER PROTECTION PROGRAM
(573) 526-5781
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Part VII – Appendices

APPENDIX # - 1 - WATER QUALITY REVIEW SHEET



Missouri Department of Natural Resources
Water Protection Program
 NPDES PERMITS AND ENGINEERING SECTION

Water Quality Review Sheet

Determination of Effluent Limits and Monitoring Requirements

Facility Information

FACILITY NAME: St. Joe State Park NPDES #: MO-0097993

FACILITY TYPE/DESCRIPTION: Outfall 001 has a design flow of 0.0055 MGD. Domestic sewage is a three-cell lagoon. Sludge is retained in lagoon. Outfall 002 has a design flow of 8.6 MGD. Outfall #002 is a stormwater conveyance.

EDU*: Ozark/Meramec Drainage 8- DIGIT HUC: 07140104 COUNTY: St. Francois

* - Ecological Drainage Unit

OUTFALL #001 NE ¼, NE ¼, Sec. 30, T36N, R5E LATITUDE/LONGITUDE: +3748180/-09030560
 LEGAL DESCRIPTION: _____

OUTFALL #002 NW ¼, U.S. Survey 3272, T36N, R5E LATITUDE/LONGITUDE: +3750270/-9031020
 LEGAL DESCRIPTION: _____

WATER QUALITY HISTORY: St. Joe State Park has a large tailing area that is partially controlled with tailing ponds. Big River Watershed has a TMDL for lead and total dissolved solids (TSS). Shaw Branch Watershed is nearly 100% tailings. Stormwater discharge (Outfall #002) to Shaw Branch is in non-compliance with existing effluent limitations for lead and Total Suspended Solids (TSS). Sediment and metals from this facility are impacting water quality in Shaw Branch (WBID: 2170) and reductions in daily loading are necessary.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.008	Secondary	Harris Branch	2.3
002	13.4	Stormwater	Shaw Branch	0.0

Receiving Waterbody Information

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
Harris Branch	U		-	-	-	General Criteria
Shaw Branch	C	02170	0.0	0.0	0.1	LWW, AQL, WBC(B)
Flat River Creek	C	2168	0.0	0.0	0.1	LWW, AQL, WBC(B)

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

COMMENTS: No waste load allocation study was provided by the facility (Outfall #001), therefore lagoon limits cannot be given. See Appendix A: Map of Outfall #002 and stream sample location.

Antidegradation Policy

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. ANTIDEGRADATION IS JUSTIFIED BY DOCUMENTING THE SOCIO-ECONOMIC IMPORTANCE OF A DISCHARGING ACTIVITY AFTER DETERMINING THE NECESSITY OF THE DISCHARGE. EFFECTIVE TENTATIVELY AUGUST 2008 (DEPENDING ON THE RULEMAKING PROCESS), A FACILITY WILL BE REQUIRED TO USE *MISSOURI'S ANTIDEGRADATION IMPLEMENTATION PROCEDURE*. THIS PROCEDURE WILL BE APPLICABLE TO NEW, UPGRADED, AND EXPANDED WASTEWATER FACILITIES.

General Assumptions of the Water Quality Review Sheet

1. A Water Quality Review Sheet (WQRS) assumes that [10 CSR 20-6.010(3) Continuing Authorities] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQRS 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 WQRS 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 WQRS 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 WQRS may change as Water Quality Standards, Methodology, and Implementation procedures change.

Mixing Considerations

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

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

Permit Limits and Information

WASTELOAD ALLOCATION STUDY CONDUCTED (Y OR N): Y

USE ATTAINABILITY ANALYSIS CONDUCTED (Y OR N): N

WHOLE BODY CONTACT USE RETAINED (Y OR N): Y

OUTFALL #001--Sewage

WET TEST (Y OR N): N FREQUENCY: NA AEC: NA METHOD: NA

PARAMETER	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	WQBEL (NOTE 1)	MONITORING FREQUENCY
FLOW	*		*	N/A	Once/quarter
BOD ₅ (MG/L)		45	30	FSR	Once/quarter
TSS (MG/L)		45	30	FSR	Once/quarter
PH (S.U.)	6.0 – 9.0		6.0 – 9.0	FSR	Once/quarter
TEMPERATURE (°C)	*		*	N/A	Once/quarter
AMMONIA AS N (MG/L) (MAY 1 – OCT 31)	3.8		1.4	Y	Once/quarter
AMMONIA AS N (MG/L) (NOV 1 – APR 30)	7.5		2.9	Y	Once/quarter
ESHERICHIA COLIFORM (E. COLI)	PLEASE SEE THE E. COLI DISCUSSION IN THE DERIVATION & DISCUSSION OF LIMITS SECTION OF THIS WQRS BELOW.				

* - Monitoring requirements only.

NOTE 1 – THIS FIELD INFORMS THE APPLICANT IF THE PARAMETER’S EFFLUENT LIMITATION IS A WATER QUALITY BASED EFFLUENT LIMITATION (WQBEL): Y – YES; FSR – FEDERAL/STATE REGULATION; AND N/A – NOT APPLICABLE. ALSO, PLEASE SEE THE GENERAL ASSUMPTIONS OF THE WQRS #4 & #5.

OUTFALL #002 Stormwater

WET TEST (Y OR N): Y FREQUENCY: TWICE/YEAR AEC: 100% METHOD: SINGLE

PARAMETER	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	WQBEL (NOTE 1)	MONITORING FREQUENCY
FLOW (MGD)			*	N/A	Once/Two Weeks
Settleable Solid (ml/L/h)	1.0		1.0	Y	Once/Two Weeks
Total Suspended Solids TSS (MG/L)	SEE DISCUSSION TABLE			Y	Once/Two Weeks
Lead, Total Recoverable (ug/L)	SEE DISCUSSION TABLE			Y	Once/Two Weeks
Lead, dissolved(ug/L)			*		Once/Two Weeks
Zinc, Total Recoverable(ug/L)	195.3		97.3	Y	Once/Two Weeks
Zinc, dissolved(ug/L)			*		Once/Two Weeks
Cadmium, Total Recoverable(ug/L)	0.56		0.28	Y	Once/Two Weeks
Cadmium, dissolved (ug/L)			*	N/A	Once/Two Weeks
Hardness(MG/L)			*	N/A	Once/Two Weeks
pH – Units			*	N/A	Once/Two Weeks

* - Monitoring requirements only.

NOTE 1 – THIS FIELD INFORMS THE APPLICANT IF THE PARAMETER’S EFFLUENT LIMITATION IS A WATER QUALITY BASED EFFLUENT LIMITATION (WQBEL): Y – YES; FSR – FEDERAL/STATE REGULATION; AND N/A – NOT APPLICABLE. ALSO, PLEASE SEE THE GENERAL ASSUMPTIONS OF THE WQRS #4 & #5.

Receiving Water Monitoring Requirements

Site S1 and S2.

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Flow MGD	Once/quarter	24-hour Estimate	S1 is Shaw Branch 100 feet upstream from confluence with Flat River Creek. S2 is Flat River Creek 100 feet downstream confluence with Shaw Branch. Report Date/Time/Location for each sample taken.
Total Solids	Once/quarter	Grab	
Hardness (mg/L)	Once/quarter	Grab	
TSS (dissolved and TR)	Once/quarter	Grab	
Cadmium (dissolved and TR)	Once/quarter	Grab	
Zinc (dissolved and TR)	Once/quarter	Grab	
Lead (dissolved and TR)	Once/quarter	Grab	

Derivation and Discussion of Limits

Wasteload allocations were calculated 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).

Outfall #001 – Main Facility Outfall

- **Biochemical Oxygen Demand (BOD₅).** 30 mg/L monthly average, 45 mg/L weekly average [10 CSR 20-7.015(8)(B)1]. Influent monitoring may be required for this facility in its Missouri State Operating Permit.
- **Total Suspended Solids (TSS).** 30 mg/L monthly average, 45 mg/L weekly average [10 CSR 20-7.015(8)(B)1]. Influent monitoring may be required for this facility in its Missouri State Operating Permit.
- **pH.** pH shall be maintained in the range from six to nine (6 – 9) standard units [10 CSR 20-7.015(8)(B)2.].
- **Temperature.** Monitoring requirement only. Temperature affects the toxicity of Ammonia.
- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L

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

Summer: May 1 – October 31, Winter: November 1 – April 30.

Staff utilized a modified Feed Forward Reaction decay formula to allow degradation for ammonia prior to reaching the first classified water body:

$$[\text{NH}_3\text{N}]_t = [\text{NH}_3\text{N}]_{t=0} * e^{-kt}$$

Where

$[\text{NH}_3\text{N}]_t$ = ammonia concentration at confluence with classified segment.

$[\text{NH}_3\text{N}]_{t=0}$ = ammonia concentration at pipe = C_e

k = NH_3 oxidation per day $(k_{1,20})\Xi_1^{(\text{Temp}-20)}$

$$k_{1,20} = 0.3(\text{day}^{-1})$$

Ξ_1 = temperature correction factor = 1.083

t = time for effluent to travel to first classified segment (in days) = 0.06 days

Travel time was calculated by Water Protection Program.

Summer Temp. = 26°C

$$\text{Given } k = (0.3)(1.083)^{(26-20)} = 0.4841 \text{ and } t = 0.06 \text{ days; } e^{-kt} = e^{-(0.4841)(0.06)} = 0.97.$$

Which means 97 % of the ammonia concentration remains after leaving the facility and reaching the first classified stream segment.

$$C_e = (1.5 \text{ mg/L}) / 0.97 = 1.55 \text{ mg/L}$$

$$\text{LTA}_c = 1.55 \text{ mg/L } (0.780) = \mathbf{1.2 \text{ mg/L}} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile, 30 day average}]$$

$$\text{MDL} = 1.2 \text{ mg/L } (3.11) = 3.75 \text{ mg/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 1.2 \text{ mg/L } (1.19) = 1.43 \text{ mg/L} \quad [\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile, } n = 30]$$

Winter Temp. = 6°C

$$\text{Given } k = (0.3)(1.083)^{(6-20)} = 0.0982 \text{ and } t = 0.06 \text{ days; } e^{-kt} = e^{-(0.0982)(0.06)} = 0.99.$$

Which means 99 % of the ammonia concentration remains after leaving the facility and reaching the first classified stream segment.

$$C_e = (3.1 \text{ mg/L}) / 0.99 = 3.13 \text{ mg/L}$$

$$\text{LTA}_c = 3.13 \text{ mg/L } (0.780) = \mathbf{2.44 \text{ mg/L}} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile, 30 day average}]$$

$$\text{MDL} = 2.4 \text{ mg/L } (3.11) = 7.5 \text{ mg/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 2.4 \text{ mg/L } (1.19) = 2.9 \text{ mg/L} \quad [\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile, } n = 30]$$

Season	Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
Summer	3.8	1.4
Winter	7.5	2.9

- **E. coli.** This facility may be required to have E. coli effluent limitations when Missouri adopts the implementation of the E. coli standards. Also, please see **GENERAL ASSUMPTIONS OF THE WQRS #7.**

Outfall #002 – *Stormwater Outfall*

• **Metals**

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and “The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 200 mg/L.

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

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Cadmium	0.915	0.880
Lead	0.690	0.690
Zinc	0.978	0.986

Conversion factors for Cd, Zn and Pb are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 200 mg/L.

- **Cadmium, Total Recoverable** Protection of Aquatic Life Chronic Criteria = 0.3 ug/L, Acute Criteria = 7.1 ug/L.

Chronic = $0.3/0.880 = 0.34 \text{ ug/L}$

Acute = $7.1/0.915 = 7.8 \text{ ug/L}$

Chronic

$C_c = ((13.4 + 0.0)0.34 - (0.0 * 0.0))/13.4$

$C_c = 0.34 \text{ ug/L}$

$WLA_c = 0.34 \text{ ug/L}$

Acute

$C_c = ((13.4 + 0.0)7.8 - (0.0 * 0.0))/13.4$

$C_c = 7.8 \text{ ug/L}$

$WLA_a = 7.8 \text{ ug/L}$

$LTA_c = 0.34(0.527) = 0.18 \text{ ug/L}$

[CV = 0.6, 99th Percentile]

$LTA_a = 7.8(0.321) = 2.5 \text{ ug/L}$

[CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

$MDL = 0.18(3.11) = 0.56 \text{ ug/L}$

[CV = 0.6, 99th Percentile]

$AML = 0.18(1.55) = 0.28 \text{ ug/L}$

[CV = 0.6, 95th Percentile, n = 4]

- **Zinc, Total Recoverable** Protection of Aquatic Life Chronic Criteria = 193 ug/L, Acute Criteria = 211 ug/L.

Chronic = $193/0.986 = 195.7$ ug/L

Acute = $211/0.978 = 206.3$ ug/L

Chronic

$C_c = ((13.4 + 0.0)195.7 - (0.0 * 0.0))/13.4$

$C_c = 195.7$ □g/L

$WLA_c = 195.7$ ug/L

Acute

$C_c = ((13.4 + 0.0)206.3 - (0.0 * 0.0))/13.4$

$C_c = 206.3$ ug/L

$WLA_a = 206.3$ ug/L

$LTA_c = 195.7(0.527) = 103.1$ ug/L

[CV = 0.6, 99th Percentile]

$LTA_a = 195.7(0.321) = 62.8$ ug/L

[CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

$MDL = 62.8 (3.11) = 195.3$ ug/L

[CV = 0.6, 99th Percentile]

$AML = 62.8 (1.55) = 97.3$ ug/L

[CV = 0.6, 95th Percentile, n = 4]

- **For Lead, Total Recoverable and Total Suspended Solids (TSS)**, the chronic waste load allocation duration curve for Shaw Branch in kg/day was taken from Table 9 within the Missouri Department of Natural Resources' *Phased DRAFT Total Maximum Daily Loads (TMDLs) For Big River, Flat River Creek and Shaw Branch* (September 2007). Protection of Aquatic Life--Lead Chronic Criteria = 5.3 ug/L, Acute Criteria = 136 ug/L.

Table 9: Dissolved Lead and TSS Wasteload Allocations for Shaw Branch (WBID: 2170)

Percent of time flow is exceeded	Flow (cfs)	Dissolved Lead WLA (kg/d)	TSS WLA (kg/d)
95%	0.23	0.003	2.9
90%	0.31	0.004	3.8
70%	0.71	0.009	8.7
50%	1.69	0.02	20.8
30%	3.7	0.05	45.3
10%	11.03	0.14	135
5%	66.57	0.82	815

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

**Revised
October 1, 1980**

**PART I - GENERAL CONDITIONS
SECTION A - MONITORING AND REPORTING**

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

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

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

Test procedures for the analysis of pollutant shall be in accordance with the Missouri Clean Water Commission Effluent Regulation 10 CSR 20-7015.
5. **Recording of Results**
 - a. For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:
 - (i) the date, exact place, and time of sampling or measurements;
 - (ii) the individual(s) who performed the sampling or measurements;
 - (iii) the date(s) analyses were performed;
 - (iv) the individual(s) who performed the analyses;
 - (v) the analytical techniques or methods used; and
 - (vi) the results of such analyses.
 - b. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or both.
 - c. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
6. **Additional Monitoring by Permittee**

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

7. **Records Retention**

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

SECTION B - MANAGEMENT REQUIREMENTS

1. **Change in Discharge**
 - a. All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant not authorized by this permit or any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.
 - b. Any facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants shall be reported by submission of a new NPDES application at least sixty (60) days before each such change, or, if they will not violate the effluent limitations specified in the permit, by notice to the Department at least thirty (30) days before such changes.
2. **Noncompliance Notification**
 - a. If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Department with the following information, in writing within five (5) days of becoming aware of such conditions:
 - (i) a description of the discharge and cause of noncompliance, and
 - (ii) the period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.
 - b. Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally with 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided with five (5) days of the time the permittee becomes aware of the circumstances. The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.
3. **Facilities Operation**

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

The permittee shall take all necessary steps to minimize any adverse impact to waters of the state resulting from noncompliance with any effluent limitations specified in this permit or set forth in the Missouri Clean Water Law and Regulations (hereinafter the Law and Regulations), including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

- a. Any bypass or shut down of a wastewater treatment facility and tributary sewer system or any part of such a facility and sewer system that results in a violation of permit limits or conditions is prohibited except:
 - (i) where unavoidable to prevent loss of life, personal injury, or severe property damages; and
 - (ii) where unavoidable excessive storm drainage or runoff would catastrophically damage any facilities or processes necessary for compliance with the effluent limitations and conditions of this permit;
 - (iii) where maintenance is necessary to ensure efficient operation and alternative measures have been taken to maintain effluent quality during the period of maintenance.
 - b. The permittee shall notify the Department in writing of all bypasses or shut down that result in a violation of permit limits or conditions. This section does not excuse any person from liability, unless such relief is otherwise provided by the statute.
6. **Removed Substances**
Solids, sludges, filter backwash, or any other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutants from entering waters of the state unless permitted by the Law, and a permanent record of the date and time, volume and methods of removal and disposal of such substances shall be maintained by the permittee.
 7. **Power Failures**
In order to maintain compliance with the effluent limitations and other provisions of this permit, the permittee shall either:
 - a. in accordance with the "Schedule of Compliance", provide an alternative power source sufficient to operate the wastewater control facilities; or,
 - b. if such alternative power source is not in existence, and no date for its implementation appears in the Compliance Schedule, halt or otherwise control production and all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.
 8. **Right of Entry**
For the purpose of inspecting, monitoring, or sampling the point source, water contaminant source, or wastewater treatment facility for compliance with the Clean Water Law and these regulations, authorized representatives of the Department, shall be allowed by the permittee, upon presentation of credentials and at reasonable times;
 - a. to enter upon permittee's premises in which a point source, water contaminant source, or wastewater treatment facility is located or in which any records are required to be kept under terms and conditions of the permit;
 - b. to have access to, or copy, any records required to be kept under terms and conditions of the permit;
 - c. to inspect any monitoring equipment or method required in the permit;
 - d. to inspect any collection, treatment, or discharge facility covered under the permit; and
 - e. to sample any wastewater at any point in the collection system or treatment process.
 9. **Permits Transferable**
 - a. Subject to Section (3) of 10 CSR 20-6.010 an operating permit may be transferred upon submission to the Department of an application to transfer signed by a new owner. Until such time as the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
 - b. The Department, within thirty (30) days of receipt of the application shall notify the new permittee of its intent to revoke and reissue or transfer the permit.
 10. **Availability of Reports**
Except for data determined to be confidential under Section 308 of the Act, and the Law and Missouri Clean Water Commission Regulation for Public Participation, Hearings and Notice to Governmental Agencies 10 CSR 20-6.020, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by statute, effluent data shall not be considered confidential. Knowingly making any false statement on any such report shall be subject to the imposition of criminal penalties as provided in Section 204.076 of the Law.
 - 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) violation 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 and 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.
12. **Permit Modification - Less Stringent Requirements**
If any permit provisions are based on legal requirements which are lessened or removed, and should no other basis exist for such permit provisions, the permit shall be modified after notice and opportunity for a hearing.
 13. **Civil and Criminal Liability**
Except as authorized by statute and provided in permit conditions on "Bypassing" (Standard Condition B-5) and "Power Failures" (Standard Condition B-7) nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.
 14. **Oil and Hazardous Substance Liability**
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act, and the Law and Regulations. Oil and hazardous materials discharges must be reported in compliance with the requirements of the Federal Clean Water Act.
 15. **State Laws**
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state statute or regulations.
 16. **Property Rights**
The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of or violation of federal, state or local laws or regulations.
 17. **Duty to Reapply**
If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit 180 days prior to expiration of this permit.
 18. **Toxic Pollutants**
If a toxic effluent standard, prohibition, or schedule of compliance is established, under Section 307(a) of the Federal Clean Water Act for a toxic pollutant in the discharge of permittee's facility and such standard is more stringent than the limitations in the permit, then the more stringent standard, prohibition, or schedule shall be incorporated into the permit as one of its conditions, upon notice to the permittee.
 19. **Signatory Requirement**
All reports, or information submitted to the Director shall be signed (see 40 CFR-122.6).
 20. **Rights Not Affected**
Nothing in this permit shall affect the permittee's right to appeal or seek a variance from applicable laws or regulations as allowed by law.
 21. **Severability**
The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

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

PART III – SLUDGE & BIOSOLIDS FROM DOMESTIC WASTEWATER TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

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

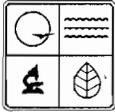
SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

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 28th of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
 - b. Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.
3. Report Forms. The annual report shall be submitted on report forms provided by the department or equivalent forms approved by the department.
4. Report shall be submitted as follows:
Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the department and EPA. Other facilities need to report only to the department. Reports shall be submitted to the addresses listed as follows:

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

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

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



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
**FORM A - APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT
 UNDER MISSOURI CLEAN WATER LAW**

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
APR 19 2008	5/15/14

Note ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for: **WATER PROTECTION PROGRAM**

An operating permit and antidegradation review public notice
 A construction permit following an appropriate operating permit and antidegradation review public notice
 A construction permit and concurrent operating permit and antidegradation review public notice
 A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)
 An operating permit for a new or unpermitted facility Construction Permit # _____
 An operating permit renewal: permit # MO- _____ Expiration Date _____
 An operating permit modification: permit # MO- 0097993 Reason: Modify SOC

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

2. FACILITY

NAME		TELEPHONE WITH AREA CODE	
MDNR, St. Joe State Park		(573) 431-1069	
ADDRESS (PHYSICAL)		FAX (573) 431-4968	
2800 Pimville Road	CITY	STATE	ZIP CODE
	Park Hills	MO	63601

3. OWNER

NAME		E-MAIL ADDRESS		TELEPHONE WITH AREA CODE	
MDNR, Division of State Parks				(800) 334-6946	
ADDRESS (MAILING)		CITY		FAX	
PO Box 176		Jefferson City			
		STATE	ZIP CODE		
		MO	65102		

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

4. CONTINUING AUTHORITY

NAME		TELEPHONE WITH AREA CODE	
MDNR, St. Joe State Park		(573) 431-1069	
ADDRESS (MAILING)		FAX (573) 431-4968	
2800 Pimville Road	CITY	STATE	ZIP CODE
	Park Hills	MO	63601

5. OPERATOR

NAME		CERTIFICATE NUMBER		TELEPHONE WITH AREA CODE	
Sandra McCain				(573) 431-1069	
ADDRESS (MAILING)		CITY		FAX (573) 431-4968	
2800 Pimville Road		Park Hills			
		STATE	ZIP CODE		
		MO	63601		

6. FACILITY CONTACT

NAME		TITLE		TELEPHONE WITH AREA CODE	
Bill Bonnell		Natural Resource Manager (1)		(573) 431-1069	
				FAX (573) 431-4968	

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 NE 1/4 NE 1/4 Sec 30 T 36N R 5E _____ County
 UTM Coordinates Easting (X): 718735 Northing (Y): 4187084
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 _____ 1/4 _____ 1/4 Sec _____ T 36N R 5E _____ County
 UTM Coordinates Easting (X): 718456 Northing (Y): 4191133

003 _____ 1/4 _____ 1/4 Sec _____ T _____ R _____ County
 UTM Coordinates Easting (X): _____ Northing (Y): _____

004 _____ 1/4 _____ 1/4 Sec _____ T _____ R _____ County
 UTM Coordinates Easting (X): _____ Northing (Y): _____

7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.

001 - SIC 9512 and NAICS _____ 002 - SIC 9511 and NAICS _____
 003 - SIC 7033 and NAICS _____ 004 - SIC 7999 and NAICS _____

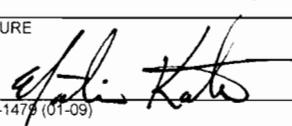
8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION
(Complete all forms that are applicable.)

- A. Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? YES NO
 If yes, complete Form C (unless storm water only, then complete U.S. Environmental Protection Agency Form 2F per Item C below).
- B. Is your facility considered a "Primary Industry" under EPA guidelines: YES NO
 If yes, complete Forms C and D.
- C. Is application for storm water discharges only? YES NO
 If yes, complete EPA Form 2F.
- D. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.
- E. Is wastewater land applied? If yes, complete Form I. YES NO
- F. Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? YES NO
 If yes, complete Form R.

9. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary. See Instructions.
(PLEASE SHOW LOCATION ON MAP. SEE 8.D ABOVE).

NAME (no change - see previous permit application)			
ADDRESS	CITY	STATE	ZIP CODE

10. 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 to the Missouri Clean Water Commission.

NAME AND OFFICIAL TITLE (TYPE OR PRINT) Martin Kator, Environmental Specialist IV	TELEPHONE WITH AREA CODE (573) 522-6380
SIGNATURE 	DATE SIGNED 08/01/2014

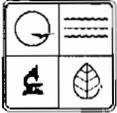
MO 780-1478 (01-09)

BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.

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

HAVE YOU INCLUDED:

- Appropriate Fees?
- Map at 1" = 2000' scale?
- Signature?
- Form C, if applicable?
- Form D, if applicable?
- Form 2F, if applicable?
- Form I (Irrigation), if applicable?
- Form R (Sludge), if applicable?



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
FORM C – APPLICATION FOR DISCHARGE PERMIT –
MANUFACTURING, COMMERCIAL, MINING,
SILVICULTURE OPERATIONS, PROCESS AND STORMWATER

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

NOTE: DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTIONS

1.00 NAME OF FACILITY

MDNR, St. Joe State Park

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER

#MO-0097993

1.20 THIS IS A NEW FACILITY AND WAS CONSTRUCTED UNDER MISSOURI CONSTRUCTION PERMIT NUMBER (COMPLETE ONLY IF THIS FACILITY DOES NOT HAVE AN OPERATING PERMIT).

2.00 LIST THE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES APPLICABLE TO YOUR FACILITY (FOUR DIGIT CODE)

A. FIRST 9512 B. SECOND 9511

C. THIRD 7033 D. FOURTH 7999

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

OUTFALL NUMBER (LIST) _____ 1/4 _____ 1/4 SEC _____ T _____ R _____ COUNTY

#001 NE 1/4 NE 1/4 Sec 30 T36N R5E St. Francois County

#002 LG 3272 ; T36N, R5E St. Francois County

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

OUTFALL NUMBER (LIST) RECEIVING WATER

#001 Harris Branch

#002 Shaw Branch

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

This is a state park. Developments + usage include campgrounds, off-road vehicle recreation area, bicycle trail, equestrian trail, hiking trails, swimming beaches, boating, fishing, picnicking, etc.

2.40 CONTINUED

C. EXCEPT FOR STORM RUNOFF, LEAKS OR SPILLS, ARE ANY OF THE DISCHARGES DESCRIBED IN ITEMS A OR B INTERMITTENT OR SEASONAL?

YES (COMPLETE THE FOLLOWING TABLE)

NO (GO TO SECTION 2.50)

1. OUTFALL NUMBER <i>(list)</i>	2. OPERATION(S) CONTRIBUTING FLOW <i>(list)</i>	3. FREQUENCY		4. FLOW				C. DURATION <i>(in days)</i>
		A. DAYS PER WEEK <i>(specify average)</i>	B. MONTHS PER YEAR <i>(specify average)</i>	A. FLOW RATE <i>(in mgd)</i>		B. TOTAL VOLUME <i>(specify with units)</i>		
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	4. LONG TERM DAILY	3. MAXIMUM AVERAGE	

2.50 MAXIMUM PRODUCTION

A. DOES AN EFFLUENT GUIDELINE LIMITATION PROMULGATED BY EPA UNDER SECTION 304 OF THE CLEAN WATER ACT APPLY TO YOUR FACILITY?

YES (COMPLETE B.)

NO (GO TO SECTION 2.60)

B. ARE THE LIMITATIONS IN THE APPLICABLE EFFLUENT GUIDELINES EXPRESSED IN TERMS OF PRODUCTION (OF OTHER MEASURE OF OPERATION)?

YES (COMPLETE c.)

NO (GO TO SECTION 2.60)

C. IF YOU ANSWERED "YES" TO B. LIST THE QUANTITY THAT REPRESENTS AN ACTUAL MEASUREMENT OF YOUR MAXIMUM LEVEL OF PRODUCTION, EXPRESSED IN THE TERMS AND UNITS USED IN THE APPLICABLE EFFLUENT GUIDELINE AND INDICATE THE AFFECTED OUTFALLS

1. MAXIMUM QUANTITY			2. AFFECTED OUTFALLS <i>(list outfall numbers)</i>
A. QUANTITY PER DAY	B. UNITS OF MEASURE	C. OPERATION, PRODUCT, MATERIAL, ETC. <i>(specify)</i>	

2.60 IMPROVEMENTS

A. ARE YOU NOW REQUIRED BY ANY FEDERAL, STATE OR LOCAL AUTHORITY TO MEET, ANY IMPLEMENTATION SCHEDULE FOR THE CONSTRUCTION, UPGRADING OR OPERATION OF WASTEWATER TREATMENT EQUIPMENT OR PRACTICES OR ANY OTHER ENVIRONMENTAL PROGRAMS THAT MAY AFFECT THE DISCHARGES DESCRIBED IN THIS APPLICATION? THIS INCLUDES, BUT IS NOT LIMITED TO, PERMIT CONDITIONS, ADMINISTRATIVE OR ENFORCEMENT ORDERS, ENFORCEMENT COMPLIANCE SCHEDULE LETTERS, STIPULATIONS, COURT ORDERS AND GRANT OR LOAN CONDITIONS.

YES (COMPLETE THE FOLLOWING TABLE)

NO (GO TO 3.00)

1. IDENTIFICATION OF CONDITION AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
				A. REQUIRED	B. PROJECTED
AOC - EPA	# 002		Reduce metals concentrations (Pb, Zn, Cd)		
AOC - MDNR	# 002				
Permit Conditions - SOC	# 001+002		Reduce NH ₃ levels in ww dish.	7/14	

B. OPTIONAL: YOU MAY ATTACH ADDITIONAL SHEETS DESCRIBING ANY ADDITIONAL WATER POLLUTION CONTROL PROGRAMS (OR OTHER ENVIRONMENTAL PROJECTS WHICH MAY AFFECT YOUR DISCHARGES) YOU NOW HAVE UNDER WAY OR WHICH YOU PLAN. INDICATE WHETHER EACH PROGRAM IS NOW UNDER WAY OR PLANNED, AND INDICATE YOUR ACTUAL OR PLANNED SCHEDULES FOR CONSTRUCTION.

MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.

3.10 BIOLOGICAL TOXICITY TESTING DATA

DO YOU HAVE ANY KNOWLEDGE OR REASON TO BELIEVE THAT ANY BIOLOGICAL TEST FOR ACUTE OR CHRONIC TOXICITY HAS BEEN MADE ON ANY OF YOUR DISCHARGES OR ON RECEIVING WATER IN RELATION TO YOUR DISCHARGE WITHIN THE LAST THREE YEARS?

YES (IDENTIFY THE TEST(S) AND DESCRIBE THEIR PURPOSES BELOW.) NO (GO TO 3.20)

3.20 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

YES (LIST THE NAME, ADDRESS AND TELEPHONE NUMBER OF AND POLLUTANTS ANALYZED BY EACH SUCH LABORATORY OR FIRM BELOW.) NO (GO TO 3.30)

A. NAME	B. ADDRESS	C. TELEPHONE (area code and number)	D. POLLUTANTS ANALYZED (list)
Environmental Analysis South	4000 East Jackson Blvd. Jackson, MO 63755	(573) 204-8817	BOD, TSS, NH ₃ , PH Settleable Solids, Pb, Cd, + Zn.

3.30 CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN THIS APPLICATION AND ALL ATTACHMENTS AND THAT, BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THAT THE INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT.

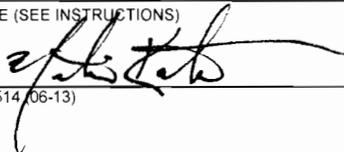
NAME AND OFFICIAL TITLE (TYPE OR PRINT)

MARTIN KATOR, Environmental Specialist IV

TELEPHONE NUMBER WITH AREA CODE

(573) 522-6380

SIGNATURE (SEE INSTRUCTIONS)



DATE SIGNED

08/01/2014

PLEASE PRINT OR TYPE. You may report some or all of this information on separate sheet
(Use the same format) instead of completing these pages.
SEE INSTRUCTIONS

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

INTAKE AND EFFLUENT CHARACTERISTICS										OUTFALL NO. 001
-------------------------------------	--	--	--	--	--	--	--	--	--	---------------------------

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT				3. UNITS (specify if blank)				4. INTAKE (optional)		B. NO. OF ANALYSES	
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION		(2) MASS
A. Biochemical Oxygen Demand (BOD)	10.8						1					
B. Chemical Oxygen Demand (COD)	-											
C. Total organic Carbon (TOC)	-											
D. Total Suspended Solids (TSS)	15						1					
E. Ammonia (as N)	2.56						1					
F. Flow	VALUE	21,652 gpd	MAXIMUM		VALUE		1			VALUE		
G. Temperature (winter)	VALUE	ambient	MINIMUM		VALUE					VALUE		
H. Temperature (summer)	VALUE	ambient	MAXIMUM		VALUE					VALUE		
I. pH	MINIMUM	6.4	MAXIMUM				1					

PART B - Mark "X" in column 2A for each pollutant you know or have reason to believe is present. Mark "X" in column 2B for each pollutant you believe to be absent. If you mark column 2A for any pollutant, you must provide the results for at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS				5. INTAKE (optional)	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE (1) CONCENTRATION	B. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	C. LONG TERM AVRG. VALUE (1) CONCENTRATION	D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE (1) CONCENTRATION	B. NO. OF ANALYSES		
			(2) MASS	(2) MASS	(2) MASS				(2) MASS			

CONVENTIONAL AND NONCONVENTIONAL POLLUTANTS

A. Bromide (24959-67-9)		X										
B. Chlorine, Total Residual		X										
C. Color	X											
D. Fecal Coliform	X											
E. Fluoride (16984-48-8)		X										
F. Nitrate - Nitrate (as N)	X											

#001

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS						
G. Nitrogen, Total Organic (as N)	X													
H. Oil and Grease	X													
I. Phosphorus (as P), Total (7723-14-0)	X													
J. Sulfate (as SO ₄) (14808-79-8)		X												
K. Sulfide (as S)		X												
L. Sulfite (as SO ₃) (14265-45-3)		X												
M. Surfactants		X												
N. Aluminum, Total (7429-90-5)		X												
O. Barium, Total (7440-39-3)		X												
P. Boron, Total (7440-42-8)		X												
Q. Cobalt, Total (7440-48-4)		X												
R. Iron, Total (7439-89-6)		X												
S. Magnesium, Total (7439-95-4)		X												
T. Molybdenum, Total (7439-98-7)		X												
U. Manganese, Total (7439-96-5)		X												
V. Tin, Total (7440-31-5)		X												
W. Titanium, Total (7440-32-6)		X												

* Not req'd to be tested for in current NPDES Permit but believed to be present in domestic wastewater.

#001

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS		5. INTAKE (optional)		B. NO. OF ANALYSES
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE (1) CONCENTRATION	B. MAXIMUM 30 DAY VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		
				(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS											
1M. Antimony, Total (7440-36-9)		X									
2M. Arsenic, Total (7440-38-2)		X									
3M. Beryllium, Total (7440-41-7)		X									
4M. Cadmium, Total (7440-43-9)		X									
5M. Chromium III (16065-83-1)		X									
6M. Chromium VI (18540-29-9)		X									
7M. Copper, Total (7440-50-8)		X									
8M. Lead, Total (7439-92-1)		X									
9M. Mercury, Total (7439-97-6)		X									
10M. Nickel, Total (7440-02-0)		X									
11M. Selenium, Total (7782-49-2)		X									
12M. Silver, Total (7440-22-4)		X									
13M. Thallium, Total (7440-28-0)		X									
14M. Zinc, Total (7440-66-6)		X									
15M. Cyanide, Amenable to Chlorination		X									
16M. Phenols, Total		X									
RADIOACTIVITY											
(1) Alpha Total		X									
(2) Beta Total		X									
(3) Radium Total		X									
(4) Radium 226 Total		X									

#002

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS				5. INTAKE (optional)		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE		C. LONG TERM AVRG. VALUE		A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			(1) CONCENTRATION	(2) MASS	
G. Nitrogen, Total Organic (as N)		X											
H. Oil and Grease		X											
I. Phosphorus (as P), Total (7723-14-0)		X											
J. Sulfate (as SO ⁴) (14808-79-8)		X											
K. Sulfide (as S)		X											
L. Sulfite (as SO ³) (14265-45-3)		X											
M. Surfactants		X											
N. Aluminum, Total (7429-90-5)		X											
O. Barium, Total (7440-39-3)		X											
P. Boron, Total (7440-42-8)		X											
Q. Cobalt, Total (7440-48-4)		X											
R. Iron, Total (7439-89-6)		X											
S. Magnesium, Total (7439-95-4)		X											
T. Molybdenum, Total (7439-98-7)		X											
U. Manganese, Total (7439-96-5)		X											
V. Tin, Total (7440-31-5)		X											
W. Titanium, Total (7440-32-6)		X											

#002

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)		B. NO. OF ANALYSES
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE (if available)		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		A. CONCEN- TRATION	B. MASS	A. LONG TERM AVRG. VALUE		
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS													
1M. Antimony, Total (7440-36-9)		X											
2M. Arsenic, Total (7440-38-2)		X											
3M. Beryllium, Total (7440-41-7)		X											
4M. Cadmium, Total (7440-43-9)	X		13										
5M. Chromium III (16065-83-1)		X											
6M. Chromium VI (18540-29-9)		X											
7M. Copper, Total (7440-50-8)		X											
8M. Lead, Total (7439-92-1)	X		26										
9M. Mercury, Total (7439-97-6)		X											
10M. Nickel, Total (7440-02-0)		X											
11M. Selenium, Total (7782-49-2)		X											
12M. Silver, Total (7440-22-4)		X											
13M. Thallium, Total (7440-28-0)		X											
14M. Zinc, Total (7440-66-6)	X												
15M. Cyanide, Amenable to Chlorination		X											
16M. Phenols, Total		X											
RADIOACTIVITY													
(1) Alpha Total		X											
(2) Beta Total		X											
(3) Radium Total		X											
(4) Radium 226 Total		X											



RECEIVED

August 1, 2014

WATER PROTECTION PROGRAM

Mr. Chris Wieberg
Lewis & Clark State Office Building
Water Protection Program – Operating Permits Section
PO Box 176
Jefferson City, MO 65102

Dear Mr. Wieberg:

On March 23, 2011, the United States Environmental Protection Agency (EPA) issued an Administrative Settlement Agreement and Order on Consent for Removal Action (AOC) to The Doe Run Company and Missouri State Parks for the Federal Tailings Pile Site at St. Joe State Park. This AOC (Docket No. CERCLA-07-2009-0012) concerns the performance and oversight of removal actions for the Federal Mine Tailings Site. The requirements for design and implementation of the removal action at the site are outlined in the Removal Action Statement of Work (SOW) from the AOC.

Missouri State Parks, in cooperation with The Doe Run Company, have taken actions to comply with the SOW. Such general removal actions have included:

1. Grading and filling activities, as well as managing stormwater in the Former Chat Pile Area.
2. Covering portions of the Former Mill Area while attempting to maintain the historic appearance.
3. Removing mine waste and contaminated soil, as well as upgrading the stormwater control structures in the Shaw Branch Creek Area.
4. Supplementing the existing vegetation in the Dam/Spillway Area and Hill Climb Area.
5. Placing cover materials and supplementing the existing vegetation, as well as updating the existing or constructing new stormwater control structures in the Borrow Pit Area.
6. Placing cover materials and supplementing the existing vegetation, as well as updating the existing or constructing new stormwater control structures in the ORV Riding Areas.

Chris Wieberg

Page 2

To address stormwater discharges from the Federal Tailings Pile Site at St. Joe State Park, Missouri State Parks' St. Joe State Park operates under Missouri State Operating Permit #MO-0097993, effective June 17, 2011. MSOP #MO-0097993 is provided with both interim and final stormwater effluent limits. Final stormwater effluent limits become effective July 2014. The effluent limits incorporated into the MSOP are based on a Waste Load Allocation (WLA) for a Total Maximum Daily Load established for the Shaw Branch Creek Area.

Missouri State Parks requests a permit modification on the basis of the November 12, 2010 USEPA Memorandum, "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs." The compliance schedule in the existing MSOP is not adequate and water quality would more effectively be protected through WLA based benchmarks and associated Best Management Practices (BMPs).

Missouri State Parks requests a modified schedule of compliance that allows for further evaluation of the current BMP effectiveness, water quality based benchmarks, and a review of the existing WLA and Use Attainability. Missouri State Parks will seek to coordinate with The Doe Run Company and the Missouri Department of Natural Resources staff to determine specific timelines and actions to be incorporated into a modified schedule of compliance.

If you have any questions, please contact me at (573) 522-6380 in the Division of State Parks, Directors Office, P.O. Box 176, Jefferson City, MO 65102. Thank you.

Sincerely,

MISSOURI STATE PARKS



Martin Kator
Environmental Specialist IV

c: Tim Duggan – AGO
Daren Eppley – AGO
Dennis Stinson – MDNR – HWP
Robert Hinkson – MDNR - HWP
Michael Montgomery – TDRC
Mark Yingling – TDRC
Jason Gunter – USEPA
Julie Van Horn – USEPA
Ty Morris – Barr Engineering

