

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-0093343

Owner: Festus Fuel
Address: 2591 Hwy 61, Festus, MO 63028

Continuing Authority: Same as above
Address: Same as above

Facility Name: Festus Fuel and Food Mart
Facility Address: 3967 Hwy 61 South, Festus, MO 63028

Legal Description: NW¼, NE¼, Sec. 33, T40N, R6E, Jefferson County
UTM Coordinates: X=731209, Y=4226512

Receiving Stream: Tributary to Selma Hollow Creek(C) (losing)
First Classified Stream and ID: 8-20-13 MUDD V 1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0904)

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

FACILITY DESCRIPTION

Outfall #001 – Eliminated

Outfall #002 – Restaurant, Gas Station – SIC #5812

Grease trap/Membrane Bio-Reactor/sludge retained in settling tank /sludge disposal by contract hauler
Design population equivalent is 103.
Design flow is 3000 gallons per day.
Actual flow is 1800 gallons per day.
Design sludge production is 1.8 dry tons/year.

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

September 1, 2012 May 13, 2015
Effective Date Revised

Sara Parker Pauley, Director, Department of Natural Resources

August 31, 2017
Expiration Date

John Madros, Water Protection Program

OUTFALL #002	TABLE A FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	PAGE NUMBER 2 of 4
		PERMIT NUMBER MO-0093343

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 on **Issuance** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/month	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L		15	10	once/quarter***	grab
Total Suspended Solids	mg/L		15	10	once/quarter***	grab
<i>E. coli</i> (Note 1)	#/100 ml	126		126	once/quarter***	grab
pH – Units	SU	**		**	once/quarter***	grab
Ammonia as N (April 1 – Sept 30) (Oct 1 – March 31)	mg/L	2.6 5.2		1.0 2.0	once/quarter***	grab
Oil & Grease	mg/L	15		10	once/quarter***	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE NEXT REPORT IS DUE JULY 28, 2015. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	5.0		5.0	once/quarter***	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE NEXT REPORT IS DUE JULY 28, 2015.

- * Monitoring requirement only.
- ** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.
- *** 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

Note 1 –Effluent limits of 126 cfu per 100 ml daily maximum and monthly average for *E. coli* are applicable year round due to losing stream designation.

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

C. SPECIAL CONDITIONS (continued)

5. Changes in Discharges of Toxic Substances

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

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

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

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

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

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

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

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

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

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

14. The discharge from the wastewater treatment facility shall be conveyed to the receiving stream via a closed pipe or a paved or rip-rapped open channel. Sheet or meandering drainage is not acceptable. The outfall sewer shall be protected against the effects of floodwater, ice or other hazards as to reasonably insure its structural stability and freedom from stoppage. The outfall shall be maintained so that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.

15. This permit establishes final ammonia limitations based on Missouri's current Water Quality Standard. On August 22, 2013, the U.S. Environmental Protection Agency (EPA) published a notice in the Federal Register announcing of the final national recommended ambient water quality criteria for protection of aquatic life from the effects of ammonia in freshwater. The EPA's guidance, Final Aquatic Life Ambient Water Quality Criteria for Ammonia – Fresh Water 2013, is not a rule, nor automatically part of a state's water quality standards. States must adopt new ammonia criteria consistent with EPA's published ammonia criteria into their water quality standards that protect the designated uses of the water bodies. The Department of Natural Resources has initiated stakeholder discussions on how to best incorporate these new criteria into the State's rules. A date for when this rule change will occur has not been determined. Also, refer to Section VI of this permit's factsheet for further information including estimated future effluent limits for this facility. It is recommended the permittee view the Department's 2013 EPA criteria Factsheet located at <http://dnr.mo.gov/pubs/pub2481.htm>.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF UPGRADE
OF
MO-0093343
FESTUS FUEL AND FOOD MART

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

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

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

This Factsheet is for a Major , Minor .

Part I – Facility Information

Facility Type: NON-POTW – Restaurant/Gas Station – SIC # 5812

Outfall #001 – Eliminated, old extended aeration plant removed from service.

Outfall #002

Facility Description:

Grease trap/Membrane Bio-Reactor/sludge retained in settling tank /sludge disposal by contract hauler

Design population equivalent is 103.

Design flow is 3000 gallons per day.

Actual flow is 1800 gallons per day.

Design sludge production is 1.8 dry tons/year.

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

- Yes; Please see attach Water Quality Review and Antidegradation Review. The owner has proposed to install a new wastewater treatment facility. Some of the effluent limits are based on the ability of the proposed technology (Membrane Filter) to meet particular levels of treatment. Also the receiving stream was evaluated and determined to be losing for discharge purposes. The losing designation requires more stringent effluent limitations.

Application Date: Construction Permit 4/11/2012

Expiration Date: The current MSOP pertaining to the existing facilities was recently renewed on 9/1/12 and expires 8/31/17.
The permit will be modified per this proposed draft upon completion of construction of the new facility.

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
#002	0.0046*	secondary	domestic	0.0 mi **

* THE Water Quality Review and Antidegradation Review are based on a design flow of 0.023 cfs.

** The losing stream segment starts near the discharge point and continues for approximately 0.6 miles below the discharge point.

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

Please see attach Water Quality Review and Antidegradation Review. This facility was last inspected on 9-18-09; the plant needed O&M attention. Surveillance was conducted several dates in November 2009 because of flooding at plant. The new plant location is higher than the old plant and should not be impacted by flooding. The flooding is caused by a culvert which runs under the site. The culvert has become clogged at times by debris, causing water to back-up.

A Geohydrologic Evaluation was performed by the Division of Geology and Land Survey. The report (project ID#: LWE10094, 6-17-10) identifies the receiving stream as losing. (See Appendix B)

Comments:

The owner has applied for a construction permit to replace the existing wastewater treatment facility. The current application is to provide a wastewater treatment facility with a design flow of 3000 GPD. The Water Quality Review and Antidegradation Review addresses expanding the facility to a design flow of 15,000 GPD. The owner desires to have the ability to expand the treatment facility to serve future businesses when opportunities arise. Future treatment facility expansions will require a new construction permit prior to construction.

The new facility will discharge through a new outfall located in a different place than the old outfall. The new outfall is designated as outfall #002. The old outfall (#001) will be eliminated when outfall #002 is placed in service.

This facility has previously been permitted with the facility names of Oscars Family Restaurant and Laddie Boy Restaurant.

Part II – Operator Certification Requirements

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

Part III– Operational Monitoring

As per [10 CSR 20-9.010(4)], the facility is not required to conduct operational monitoring.

Part IV – Receiving Stream Information

Please see attach Water Quality Review and Antidegradation Review (Appendix A)

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

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

Applicable ; Please see attach Water Quality Review and Antidegradation Review (Appendix A)

ANTI-BACKSLIDING:

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

- New facility, backsliding does not apply.

- 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.

- New and/or expanded discharge, please see **APPENDIX A FOR ANTIDegradation ANALYSIS**.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

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

BIOSOLIDS & SEWAGE SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information regarding biosolids and sludge is located at the following web address: <http://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

COMPLIANCE AND ENFORCEMENT:

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

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

PRETREATMENT PROGRAM:

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

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 given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Not Applicable ; A RPA was not conducted for this facility.

REMOVAL EFFICIENCY:

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

Not Applicable ; Influent monitoring is not being required to determine percent removal.

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

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

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

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

SCHEDULE OF COMPLIANCE (SOC):

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

Not Applicable ; This permit does not contain a SOC.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

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

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

VARIANCE:

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

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

Please see attach Water Quality Review and Antidegradation Review (Appendix A)

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.

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

40 CFR 122.41(M) - BYPASSES:

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

Not Applicable ; This facility does not anticipate bypassing.

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

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

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Not Applicable ; This facility does not discharge to a 303(d) listed stream.

Part VI – Effluent Limits Determination

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

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

Please mark all appropriate designated waters of the state categories of the receiving stream.

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

OUTFALL #001 – MAIN FACILITY OUTFALL

Please see attach Water Quality Review and Antidegradation Review (Appendix A)

Sampling Frequency Justification:

This facility is a new facility replacing an existing facility. Due to the small flow and high level of treatment and expected consistent nature of the effluent, quarterly sampling will remain in the permit for outfall #002.

The Clean Water Commission has directed the Department to proceed with amending 10 CSR 20-7.015 to reduce the sampling frequency required for E.coli to a lesser frequency, still protective of water quality standards, for smaller facilities, including those with discharges of 100,000 gallons per day or less.

Sampling Type Justification

Due to the small flow and high level of treatment and expected consistent nature of the effluent, sample type may be grab sample.

Part VII – Finding of Affordability

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

Not Applicable;

The Department is not required to determine findings of affordability because the facility is not a **combined or separate sanitary sewer system for a publically-owned treatment works**.

Part VIII – Administrative Requirements

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

PERMIT SYNCHRONIZATION:

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

PUBLIC NOTICE:

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

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

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

- The Public Notice period for this operating permit was from December 14, 2012 to January 13, 2013. No responses received.

The owner was issued construction permit CP0001276 on May 28, 2013; that permit expired without construction taking place. Construction permit CP0001656 was issued on June 27, 2014. The facility was constructed and a Statement of Work Completed was received by the Department on December 12, 2014. The operating permit modification fee of \$37.50 was received by the Department on April 20, 2015.

The operating permit is being issued as public noticed except for the following:

1. Special Condition #14 was added concerning EPA Water Quality Criteria from 2013 and the potential to affect future discharge limits for ammonia
2. The receiving stream was approved as a class C stream in October 2014 by USEPA. The stream identification was changed to reflect the new 100K extent expansion of classified streams.

Receiving Stream:	Tributary to Selma Hollow Creek(C) (losing)
First Classified Stream and ID:	8-20-13 MUDD V 1.0 (C) (3960)
USGS Basin & Sub-watershed No.:	(07140101-0904)

3. In this fact sheet it is noted that the losing stream segment starts near the discharge point and continues for approximately 0.6 miles below the discharge point.

Other changes such as updating Standard Conditions and updating Special Conditions will take place during renewal of the permit.

DATE OF FACT SHEET: NOVEMBER 7, 2012; UPDATED APRIL 29, 2015

COMPLETED BY:

**ANDREW APPELBAUM, ENVIRONMENTAL ENGINEER
MISSOURI DEPARTMENT OF NATURAL RESOURCES
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Appendices

APPENDIX A – ANTIDegradation ANALYSIS:

Water Quality and Antidegradation Review

*For the Protection of Water Quality
and Determination of Effluent Limits for Discharge to the
Unnamed Tributary to Selma Hollow*

by

Festus Fuel Wastewater Treatment Facility



June, 2012

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1. FACILITY INFORMATION

FACILITY NAME: Festus Fuel WWTF (Oscar's Family Restaurant) NPDES #: MO-0093343

FACILITY TYPE/DESCRIPTION:

A Water Quality and Antidegradation Review was completed for Festus Fuel in May 2011 with a preferred alternative of construction of a recirculating sand filter (RSF) with chlorine disinfection and dechlorination. Due to concern over whether an RSF could reach ammonia limits or not, it was decided that they would like to construct a Bio-Microbics Membrane Bioreactor system instead.

The treatment facility is a package plant that serves a gas station and convenience store and a sit-down style restaurant with 50 seats. A facility expansion from 3,000 gallons per day to 15,000 gallons per day is proposed. The plan is to construct the facility in two phases, the first being capable of treating 5,000 to 10,000 GPD and the second an additional 5,000 to 10,000 GPD for a total of 15,000 GPD. The preferred alternative is the Bio-Microbics membrane bioreactor. Because the membrane openings are so small, the applicant is not planning on disinfecting. The facility will discharge into the Unnamed Tributary to Selma Hollow. The first classified stream is the Mississippi River (Location – See Appendix A).

COUNTY: Jefferson UTM COORDINATES: X= 731259 / Y= 4226582
 12- DIGIT HUC: 071401010904 LEGAL DESCRIPTION: NW ¼, NE ¼, Sec. 33, T40N, R6E
 EDU*: Ozark/Apple/Joachim ECOREGION: Ozark Border

* - Ecological Drainage Unit

2. WATER QUALITY INFORMATION

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

2.1 WATER QUALITY HISTORY:

The existing facility is in need of an upgrade as it is in a floodplain and is impacted frequently. Only three quarterly discharge monitoring reports with sampling data, all from 2011, have been submitted in the last four years (05/18/2008 – 05/18/2012).

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.023	Secondary	Unnamed Tributary to Selma Hollow	3.7

3. RECEIVING WATERBODY INFORMATION

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
Unnamed Tributary to Selma Hollow	U	-	-	-	-	General Criteria
Selma Hollow	U	-	-	-	-	General Criteria
Mississippi River	P	1707.03				LWW, AQL, DWS, IND, WBC(B), SCR

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

RECEIVING WATER BODY SEGMENT #1: Unnamed Tributary to Selma Hollow and Selma Hollow
 Upper end segment* UTM coordinates: X: 731259 Y: 4226582 (Outfall)
 Lower end segment* UTM coordinates: X: 733020 Y: 4230470 (Confluence with Mississippi River)

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

4. GENERAL COMMENTS

Fribis Engineering prepared, on behalf of Festus Fuel, the Antidegradation Review for Festus Fuel Wastewater Treatment Facility (Report) revised March 21, 2011. The Geohydrological Evaluation submitted with the report stated this is a losing stream setting. An alternative analysis was conducted to fulfill the requirements of the AIP. A Tier Analysis was submitted by the applicant. A dissolved oxygen modeling analysis was not conducted due to the losing stream designation of the receiving stream. This discharge is proposed to serve a convenience store, restaurant, and, potentially, a future truck stop or fast-food restaurant, and it is assumed to result in significant degradation for all pollutants of concern (POCs) in the unnamed tributary to Selma Hollow and Selma Hollow. The Mississippi River was on the 2008 303(d) List because of Lead and Zinc from Herculaneum smelter, but it is not on the 2010 303(d) List.

The effluent limits in this review were developed to be protective of beneficial uses and to retain the remaining assimilative capacity. MDNR has determined that the submitted report is sufficient and meets the requirement of the AIP. Information found in the submitted report and in the summary forms provided by the applicant in Appendix B was used to develop this review document. A Missouri Department of Conservation Natural Heritage Review – Level 2 response was obtained by the applicant and the applicant has contacted the Department of Conservation regarding the potential species of concern that could be impacted by the project and discussed using best management practices during construction. Also, Jefferson County Public Sewer District will have the opportunity to evaluate the project after construction plans are completed.

5. ANTIDEGRADATION REVIEW INFORMATION

The following is a review of the Antidegradation Review for Festus Fuel Wastewater Treatment Facility (Report) revised March 21, 2011.

5.1. TIER DETERMINATION

Below is a list of pollutants of concern reasonably expected to be in the discharge (see Appendix B: Tier Determination and Effluent Limit Summary). Pollutants of concern are defined as those pollutants “proposed for discharge that affects beneficial use(s) in waters of the state. POCs include pollutants that create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge.” (AIP, Page 7). Tier 2 was assumed for all POCs (see Appendix D).

Table 1. Pollutants of Concern and Tier Determination

POLLUTANTS OF CONCERN	TIER*	DEGRADATION	COMMENT
Biochemical Oxygen Demand (BOD ₅)	2	Significant	
Dissolved Oxygen		Significant	
Total Suspended Solids (TSS)	**	Significant	
Ammonia	2	Significant	
pH	***	Significant	Permit limits applied
Escherichia coli (E. coli)	2	Significant	
Oil and Grease	2	Significant	

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

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

Tier Determination and Effluent Summary

For pollutants of concern, the attachments are:

Attachment A, Tier 2 with significant degradation.

5.2. EXISTING WATER QUALITY

No existing water quality data was submitted. All POCs were considered to be Tier 2 and significantly degraded in the absence of existing water quality.

5.3. DEMONSTRATION OF NECESSITY AND SOCIAL AND ECONOMIC IMPORTANCE

Missouri’s antidegradation implementation procedures specify that if the proposed activity does result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required. Seven alternatives from non-degrading to less degrading to degrading alternatives were evaluated. The non-degrading alternatives of land application and regional sewer collection / treatment were each determined to be not practicable due to land availability and cost. The less degrading alternatives of an Ecopod (Base Cost Alternative), AdvanTex, Extended Aeration with Disk Filters, Recirculating Sand Filter, and Membrane Bioreactor were considered practicable with the economic efficiency analysis shown in Table 2. All meet Water Quality Standards. The preferred alternative is the Membrane Bioreactor. Due to concerns about meeting ammonia limits, the membrane bioreactor was chosen. This alternative produces the highest quality effluent.

Table 2: Alternatives Analysis Comparison

	Ecopod	AdvanTex	Extended Aeration With Disk Filters	Recirculating Sand filter	Membrane Bioreactor
BOD (mg/L)	10	10	10	10	<10
TSS (mg/L)	10	10	10	10	<10
E. coli (#/100 mL)	126	126	126	126	126
Ammonia (s/w) (mg/L)	1.4/2.9	1.4/2.9	1.4/2.9	1.4/2.9	1.0/2.0
DO (mg/L)	5	5	5	5	5
Practical	Y	Y	Y	Y	Y
Economical	Y	Y	N	Y	Y
Present Worth Cost	\$276,390	\$310,730	\$376,442	\$277,972	\$334,080
Ratio	1:1	1:1.12	1:1.36	1:1.01	1:1.21

* Life cycle cost at 20 year design life and x% interest

5.3.1. REGIONALIZATION ALTERNATIVE

Within Section II B 1. of the AIP, discussion of the potential for discharge to a regional waste water collection system is mentioned. The applicant provided discussion of this alternative. The applicant mentioned Jefferson County Public Sewer District as the regional authority and said that they are interested in owning and operating new facilities depending upon their ability to operate and maintain the system at a reasonable price. Jefferson County Public Sewer District will have the opportunity to evaluate the project after construction plans are completed.

NEEDS A WAIVER TO PREVENT CONFLICT WITH AREA WIDE MANAGEMENT PLAN APPROVED UNDER SECTION 208 OF THE CLEAN WATER ACT AND/OR UNDER 10 CSR 20-6.010(3) (B) 1 OR 2 CONTINUING AUTHORITIES? (Y OR N) N

5.3.2. SOCIAL AND ECONOMIC IMPORTANCE EVALUATION

The applicant first identified the community that will be affected by the proposed degradation of water quality. Within a Social and Economic Importance section several factors were evaluated. This facility will provide wastewater service to accommodate commercial businesses (gas station, convenience store, and restaurant) and potential future commercial development (truck stop or fast-food restaurant). The customer base for the businesses in this development includes approximately 900 residences and three schools. The tax revenue for the county will be a long-term benefit from this development. Also, the Festus Fuels facility provides a service to residents as it provides for a shorter drive for the patrons, who desire the much-needed services of the gas station, convenience store, and restaurant.

6. GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDegradation REVIEW

1. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(3) Continuing Authorities and 10 CSR 20-6.010(4) (D), consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQAR does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQAR may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.
9. If the proposed treatment technology is not covered in 10 CSR 20-8 Design Guides, the treatment process may be considered a new technology. As a new technology, the permittee will need to work with the review engineer to ensure equipment is sized properly. The operating permit may contain additional requirements to evaluate the effectiveness of the technology once the facility is in operation. This Antidegradation Review is based on the information provided by the facility and is not a comprehensive review of the proposed treatment technology. If the review engineer determines the proposed technology will not consistently meet proposed effluent limits, the permittee will be required to revise their Antidegradation Report.

7. MIXING CONSIDERATIONS

Mixing Zone (MZ): Not Allowed, 7Q10 less than 0.1 cfs [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)]

8. PERMIT LIMITS AND MONITORING INFORMATION

WASTELOAD ALLOCATION STUDY CONDUCTED (Y OR N): N USE ATTAINABILITY ANALYSIS CONDUCTED (Y OR N): N WHOLE BODY CONTACT USE RETAINED (Y OR N): N

OUTFALL #001

WET TEST (Y OR N): N FREQUENCY: N/A AEC: N/A METHOD: N/A

TABLE 3. EFFLUENT LIMITS

PARAMETER	UNITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	BASIS FOR LIMIT (NOTE 2)	MONITORING FREQUENCY
FLOW	MGD	*		*	FSR	ONCE/MONTH
BIOCHEMICAL OXYGEN DEMAND ₅	MG/L		15	10	FSR/PEL	ONCE/MONTH
TOTAL SUSPENDED SOLIDS	MG/L		15	10	PEL	ONCE/MONTH
DISSOLVED OXYGEN	MG/L	5.0 (MINIMUM)		5.0 (MINIMUM)	WQBEL	ONCE/MONTH
pH	SU	6.5–9.0		6.5 – 9.0	FSR	ONCE/MONTH
AMMONIA AS N (APR 1 – SEPT 30)	MG/L	2.6		1.0	PEL	ONCE/MONTH
AMMONIA AS N (OCT 1 – MAR 31)	MG/L	5.2		2.0	PEL	ONCE/MONTH
ESCHERICHIA COLIFORM (E. COLI)	NOTE 1	126**		126**	FSR	ONCE/MONTH
OIL & GREASE	MG/L	15		10	FSR	ONCE/MONTH

NOTE 1 – COLONIES/100 ML

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

* - Monitoring requirements only.

** - The Monthly Average for E. coli shall be reported as a Geometric Mean.

9. RECEIVING WATER MONITORING REQUIREMENTS

No receiving water monitoring requirements recommended at this time.

10. DERIVATION AND DISCUSSION OF LIMITS

Wasteload allocations and limits were calculated using two methods:

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

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

Where C = downstream concentration

C_s = upstream concentration

Q_s = upstream flow

C_e = effluent concentration

Q_e = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration).

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).

2) Alternative Analysis-based – Using the preferred alternative’s treatment capacity for conventional pollutants such as BOD₅ and TSS that are provided by the consultant as the WLA, the significantly-degrading effluent average monthly and average weekly limits are determined by applying the WLA as the average monthly (AML) and multiplying the AML by 1.5 to derive the average weekly limit (AWL). For toxic and nonconventional pollutant such as ammonia, the treatment capacity is applied as the significantly-degrading effluent monthly average (AML). A maximum daily can be derived by dividing the AML by 1.19 to determine the long-term average (LTA). The LTA is then multiplied by 3.11 to obtain the maximum daily limitation. This is an accepted procedure that is defined in USEPA’s “Technical Support Document For Water Quality-based Toxics Control” (EPA/505/2-90-001).

Note: Significantly-degrading effluent limits have been based on the authority included in Section III. Permit Consideration of the AIP. Also under 40 CFR 133.105, permitting authorities shall require more stringent limitations than equivalent to secondary treatment limitations for 1) existing facilities if the permitting authority determines that the 30-day average and 7-day average BOD₅ and SS effluent values that could be achievable through proper operation and maintenance of the treatment works, and 2) new facilities if the permitting authority determines that the 30-day average and 7-day average BOD₅ and SS effluent values that could be achievable through proper operation and maintenance of the treatment works, considering the design capability of the treatment process.

10.1. OUTFALL #001 – MAIN FACILITY OUTFALL

10.2. LIMIT DERIVATION

- **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).** BOD₅ limits of 10 mg/L monthly average, 15 mg/L average weekly. The preferred alternative effluent limits are the same as the losing stream limits at 10 CSR 20-7.015(4)(B)1.
- **Total Suspended Solids (TSS).** Preferred alternative effluent limits. 10 mg/L monthly average, 15 mg/L average weekly limit.
- **pH.** pH shall be maintained in the range from six and one-half to nine (6.5– 9.0) standard units [10 CSR 20-7.015(4)(B)3.].

- Total Ammonia Nitrogen.** Preferred alternative effluent average monthly limits of 1.0 mg/L in summer and 2.0 mg/L in winter. Because the average monthly limits for summer and winter are more protective than the water quality-based limits (WQBEL) calculated below, we are applying the preferred alternative effluent limits (PEL). We apply this treatment capacity as the significantly-degrading effluent monthly average (AML). A maximum daily can be derived by dividing the AML by 1.19 to determine the long-term average (LTA). The LTA is then multiplied by 3.11 to obtain the maximum daily limitation. This is an accepted procedure that is defined in USEPA’s “Technical Support Document For Water Quality-based Toxics Control” (EPA/505/2-90-001).

PEL Calculation:

Summer

AML = 1.0 mg/L
 LTA = 1.0 mg/L / 1.19 = 0.84 mg/L [CV = 0.6, 95th Percentile, n = 30]
 MDL = 0.84 mg/L (3.11) = 2.6 mg/L [CV = 0.6, 99th Percentile]

Winter

AML = 2.0 mg/L
 LTA = 2.0 mg/L / 1.19 = 1.68 mg/L [CV = 0.6, 95th Percentile, n = 30]
 MDL = 1.68 mg/L (3.11) = 5.2 mg/L [CV = 0.6, 99th Percentile]

Season	Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
Summer	2.6	1.0
Winter	5.2	2.0

WQBEL Calculation:

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

Summer

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.023 + 0.0)1.5 - (0.0 * 0.01)) / 0.023$
 $C_e = 1.5 \text{ mg/L}$

Acute WLA: $C_e = ((0.023 + 0.0)12.1 - (0.0 * 0.01)) / 0.023$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L (0.780)} = \mathbf{1.2 \text{ mg/L}}$ [CV = 0.6, 99th Percentile, 30 day avg.]
 $LTA_a = 12.1 \text{ mg/L (0.321)} = 3.88 \text{ mg/L}$ [CV = 0.6, 99th Percentile]

$MDL = 1.2 \text{ mg/L (3.11)} = 3.7 \text{ mg/L}$ [CV = 0.6, 99th Percentile]
 $AML = 1.2 \text{ mg/L (1.19)} = 1.4 \text{ mg/L}$ [CV = 0.6, 95th Percentile, n = 30]

Winter

Chronic WLA: $C_e = ((0.023 + 0.0)3.1 - (0.0 * 0.01))/0.023$
 $C_e = 3.1 \text{ mg/L}$

Acute WLA: $C_e = ((0.023 + 0.0)12.1 - (0.0025 * 0.01))/0.023$
 $C_e = 12.1 \text{ mg/L}$

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

MDL = 2.4 mg/L (3.11) = 7.5 mg/L [CV = 0.6, 99th Percentile]
 AML = 2.4 mg/L (1.19) = 2.9 mg/L [CV = 0.6, 95th Percentile, n = 30]

Season	Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
Summer	3.7	1.4
Winter	7.5	2.9

• **E. coli.**

Effluent limitations for losing streams are 126 colonies per 100 ml monthly average and 126 colonies per 100 ml daily average [10 CSR 20-7.015 (4)(B)4.] and [10 CSR 20-7.031(4)(C), Table A]. For facilities less than 100,000 gpd: Per the Clean Water Commission Directive in January 2011, the *E. Coli* sampling/monitoring frequency shall be set to match the monitoring frequency of other parameters in the permit during the recreational season (April 1 – October 31), with compliance to be determined by calculating the geometric mean of all samples collected during the reporting period (samples collected during the calendar month for the monthly average). Further, the limit may change depending on the outcome of future state effluent regulation revision. Please see **GENERAL ASSUMPTIONS OF THE WQAR #7.**

- **Oil & Grease.** Conventional pollutant, [10 CSR 20-7.031, Table A]. Effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

11. ANTIDegradation REVIEW PRELIMINARY DETERMINATION

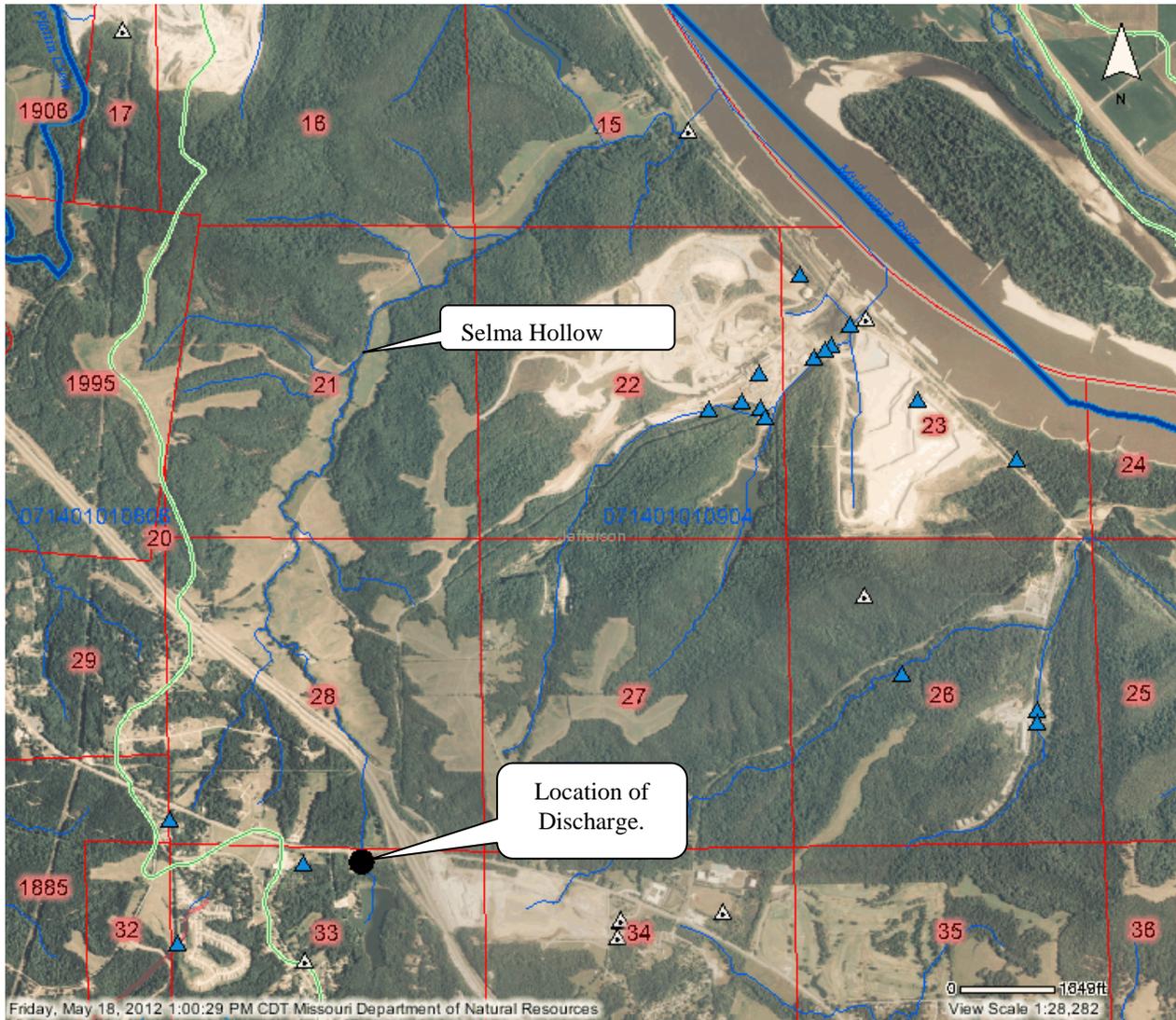
The proposed new facility discharge, Festus Fuel WWTF, 15,000 GPD will result in significant degradation of the segment identified in the unnamed tributary to Selma Hollow. An Ecopod was determined to be the base case technology (lowest cost alternative that meets technology and water quality based effluent limitations. The cost effectiveness of the other technologies were evaluated, and the Bio-Microbics membrane bioreactor was determined to be the preferred alternative.

The Bio-Microbics membrane bioreactor is not covered in 10 CSR 20-8 Design Guides and may be considered a new treatment technology. As a new technology, the permittee will need to work with the review engineer to ensure equipment is sized properly and that the technology will consistently achieve the proposed effluent limits. The operating permit may contain additional requirements to evaluate the effectiveness of the technology once the facility is in operation.

Per the requirements of the AIP, the effluent limits in this review were developed to be protective of beneficial uses and to attain the highest statutory and regulatory requirements. MDNR has determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Keith Forck
 Date: 05/27/2011
 Reviser: Cailie Carlile
 Revised Date: 06/04/2012
 Unit Chief: John Rustige, P.E.

APPENDIX A: MAP OF DISCHARGE LOCATION



APPENDIX B: ANTIDegradation REVIEW SUMMARY ATTACHMENTS

The attachments that follow contain summary information provided by the applicant, Festus Fuel Wastewater Treatment Facility.

- 1) Tier Determination and Effluent Limit Summary Sheet
- 2) Attachment A: Tier 2 – Significant Degradation



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
ANTIDEGRADATION REVIEW SUMMARY
TIER DETERMINATION AND EFFLUENT LIMIT SUMMARY

RECEIVED

MAY 20 2011

WATER PROTECTION PROGRAM

1. FACILITY			
NAME Festus Fuel WWTF (Oscar's Family Restaurant)		TELEPHONE NUMBER WITH AREA CODE 636-937-3181	
ADDRESS (PHYSICAL) 3967 Highway 61 South	CITY Festus	STATE MO	ZIP CODE 63028
2. RECEIVING WATER BODY SEGMENT #1			
NAME Wet weather branch of Selma Hollow to Mississippi River. Upper End: X731259:Y4226582 Lower End: X733020:Y4230470			
2.1	UPPER END OF SEGMENT (Location of discharge) UTM _____ OR Lat <u>X</u> , Long <u>Y</u>		
2.2	LOWER END OF SEGMENT UTM _____ OR Lat <u>X</u> , Long <u>Y</u>		
Per the Missouri Antidegradation Rule and Implementation Procedure, or AIP, the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."			
3. WATER BODY SEGMENT #2 (IF APPLICABLE)			
NAME n/a			
3.1	UPPER END OF SEGMENT UTM _____ OR Lat _____, Long _____		
3.2	LOWER END OF SEGMENT UTM _____ OR Lat _____, Long _____		
4. WATER BODY SEGMENT #3 (IF APPLICABLE)			
NAME n/a			
4.1	UPPER END OF SEGMENT UTM _____ OR Lat _____, Long _____		
4.2	LOWER END OF SEGMENT UTM _____ OR Lat _____, Long _____		
5. PROJECT INFORMATION			
Is the receiving water body an Outstanding National Resource Water, an Outstanding State Resource Water, or drainage thereto? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
In Tables D and E of 10 CSR 20-7.031, Outstanding National Resource Waters and Outstanding State Resource Water are listed. Per the Antidegradation Implementation Procedure Section 1.B.3., "any degradation of water quality is prohibited in these waters unless the discharge only results in temporary degradation." Therefore, if degradation is significant or minimal, the Antidegradation Review will be denied.			
Will the proposed discharge of all pollutants of concern, or POCs, result in no net increase in the ambient water quality concentration of the receiving water after mixing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, submit a summary table showing the levels of each pollutant of concern before and after the proposed discharge in the receiving water and then complete Attachment B for the first downstream classified water body segment.			
Will the discharge result in temporary degradation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, complete Attachment C.			
Has the project been determined as non-degrading? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, complete No Degradation Evaluation - Conclusion of Antidegradation Review form. Submit with the appropriate Construction Permit Application as no antidegradation review is required.			
If yes to one of the above questions, skip to Section 8 - Wet Weather.			

6. EXISTING WATER QUALITY DATA OR MODEL SUMMARY		
Obtaining Existing Water Quality is possible by three methods according to the Antidegradation Implementation Procedure Section II.A.1.: (1) using previously collected data with an appropriate Quality Assurance Project Plan, or QAPP (2) collecting water quality data by approved the Missouri Department of Natural Resources methodology or (3) using an appropriate water quality model. QAPPs must be submitted to the department for approval well in advance (six months) of the proposed activity. Provide all the appropriate corresponding data and reports which were approved by the department Water Quality Monitoring and Assessment Section.		
Date existing water quality data was provided by the Water Quality Monitoring and Assessment Section:		
Approval date of the QAPP by the Water Quality Monitoring and Assessment Section:		
Approval date of the project sampling plan by the Water Quality Monitoring and Assessment Section:		
Approval date of the data collected for all appropriate pollutants of concern by the Water Quality Monitoring and Assessment Section:		
Comments/Discussion:		
Significant Degradation assumed. Attachment A: Tier 2 Significant Degradation - (previously submitted)		
7. POLLUTANTS OF CONCERN AND TIER DETERMINATION(S)		
Pollutants of Concern to be considered include those pollutants reasonably expected to be present in the discharge per the Antidegradation Implementation Procedure Section II.S. The tier protection levels are specified and defined in rule at 10 CSR 20-7.031 (2).		
Water Body Segment One		
Pollutants of Concern and Tier Determination(s)		
Tier 1	Tier 2 with Minimal Degradation	Tier 2 with Significant Degradation
Tier 2 with significant degradation		
BOD *		
TSS *		
Ammonia as N		
Bacteria (E. Coli)		
Note: Add an asterisk to items that you only assume are Tier 2 with significant degradation.		
Water Body Segment Two		
Pollutants of Concern and Tier Determination(s)		
Tier 1	Tier 2 with Minimal Degradation	Tier 2 with Significant Degradation
<ul style="list-style-type: none"> • For pollutants of concern that are Tier 2 with significant degradation, complete Attachment A. • For pollutants of concern that are Tier 2 with minimal degradation, complete Attachment B. • For pollutants of concern that are Tier 1, complete Attachment D. Additionally, a Tier 2 review must be conducted for each pollutant of concern on the appropriate water body segment. 		
8. WET WEATHER ANTICIPATIONS		
If an applicant anticipates excessive inflow or infiltration and pursues approval from the department to bypass secondary treatment, a feasibility analysis is required. The feasibility analysis must comply with the criteria of all applicable state and federal regulations including 40 CFR 122.41(m)(4). Attach the feasibility analysis to this report.		
What is the Wet Weather Flow Peaking Factor in relation to design flow?		
Peaking flow estimate at less than 1.5		
Wet Weather Design Summary:		
Minimal Inflow or infiltration expected due to only 2 connections with minimal collection system.		

9. SUMMARY OF THE PROPOSED ANTIDegradation REVIEW EFFLUENT LIMITS

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

Pollutant of Concern	Units	Wasteload Allocation	Average Monthly Limit	Daily Maximum Limit
BOD5	mg/l		10	
TSS	mg/l		10	
Dissolved Oxygen	mg/l		5 (minimum)	5 (minimum)
Ammonia	mg/l		1.4 summer, 2.9 winter	3.7 summer, 7.5 winter
Bacteria (E. Coli)	colonies/100ml		126	126
ph	SU		6.5-9.0	6.5-9.0
Oil & Grease	mg/l		10	15
Total Residual Chlorine	mg/l		0.008	0.017

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

Attach the Antidegradation Review report and all supporting documentation.

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

SIGNATURE  DATE 05/12/2011

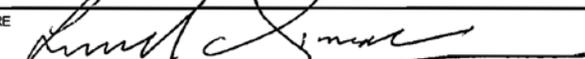
NAME AND OFFICIAL TITLES
 Eugene A. Fribis President

COMPANY NAME
 Fribis Engineering, Inc.

ADDRESS 3520 Jeffco Boulevard CITY Imperial STATE Missouri ZIP CODE 63010

TELEPHONE NUMBER WITH AREA CODE 636-464-3610 E-MAIL ADDRESS gfrbis@fribis.com

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

SIGNATURE  DATE 05/13/2011

NAME AND OFFICIAL TITLES
 Lino Simon OWNER

ADDRESS 3967 Highway 61 South CITY Festus STATE Missouri ZIP CODE 63028

TELEPHONE NUMBER WITH AREA CODE 636-937-3181 E-MAIL ADDRESS none

CONTINUING AUTHORITY: Continuing Authority is the permanent organization that will be responsible for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(3) available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf.

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

SIGNATURE _____ DATE _____

NAME AND OFFICIAL TITLES
 same as OWNER

ADDRESS _____ CITY _____ STATE _____ ZIP CODE _____

TELEPHONE NUMBER WITH AREA CODE _____ E-MAIL ADDRESS _____



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
ANTIDegradation REVIEW SUMMARY
ATTACHMENT A: TIER 2 – SIGNIFICANT DEGRADATION

1. FACILITY					
NAME Festus Fuel			TELEPHONE NUMBER WITH AREA CODE 636-937-3181		
ADDRESS (PHYSICAL) 3967 Highway 61 South		CITY Festus	STATE MO	ZIP CODE 63028	
2. RECEIVING WATER BODY SEGMENT #1					
NAME Wet Weather Branch of Selma Hollow to Mississippi River					
3. WATER BODY SEGMENT #2 (IF APPLICABLE)					
NAME n/a					
4. IDENTIFYING ALTERNATIVES					
Supply a summary of the alternatives considered and the level of treatment attainable with regards to the alternative. "For Discharges likely to cause significant degradation, an analysis of non-degrading and less-degrading alternatives must be provided," as stated in the Antidegradation Implementation Procedure Section II.B.1. Per 10 CSR 20-6.010(4)(D)1., the feasibility of a no-discharge system must be considered. Attach all supportive documentation in the Antidegradation Review report.					
Non-degrading alternatives: Land Application					
Alternatives ranging from less-degrading to degrading including Preferred Alternative (All must meet water quality standards):					
Alternatives	Level of Treatment Attainable for each Pollutant of Concern				
	BOD	TSS	Ammonia as N	Bacteria (E. Coli)	
	(mg/L)	(mg/L)	(mg/L)	(#/100mL)	
Pump to Selma Village	30	30	0.5-5.0	0-50	
Sewage Treatment Plant	10	15	< 0.1	0-20	
Identifying Alternatives Summary: _____					
One off-site alternative and five on-site alternatives were studied. On-Site tertiary treatment facility was recommended.					

MO780-2021 (01/09)

5. DETERMINATION OF THE REASONABLE ALTERNATIVE
<p>Per the Antidegradation Implementation Procedure Section II.B.2, "a reasonable alternative is one that is practicable, economically efficient and affordable." Provide basis and supporting documentation in the Antidegradation Review report.</p>
<p>Practicability Summary: "The practicability of an alternative is considered by evaluating the effectiveness, reliability, and potential environmental impacts," according to the Antidegradation Implementation Procedure Section II.B.2.a. Examples of factors to consider, including secondary environmental impacts, are given in the Antidegradation Implementation Procedure Section II.B.2.a.</p> <p>Two alternatives were practicable, an on-site treatment plant and pumping to the Selma Village Lagoon.</p>
<p>Economic Efficiency Summary: Alternatives that are deemed practicable must undergo a direct cost comparison in order to determine economic efficiency. Means to determine economic efficiency are provided in the Antidegradation Implementation Procedure Section II.B.2.b.</p> <p>A direct cost comparison was made with the determination that an on-site tertiary sewage treatment plant was preferable.</p>
<p>Affordability Summary: Alternatives identified as most practicable and economically efficient are considered affordable if the applicant does not supply an affordability analysis. An affordability analysis per the Antidegradation Implementation Procedure Section II.B.2.c, "may be used to determine if the alternative is too expensive to reasonably implement."</p> <p>It was determined that the on-site treatment plants are affordable.</p>
<p>Preferred Chosen Alternative:</p> <p>On-site tertiary sewage treatment plant treating 15,000 gallons per day.</p>
<p>Reasons for Rejecting the other Evaluated Alternatives:</p> <p>Either not affordable, unproven or lack of operating history.</p>
<p>Comments/Discussion: See Report for complete explanation.</p>

6. SOCIAL AND ECONOMIC IMPORTANCE OF THE PREFERRED ALTERNATIVE	
<p>If the preferred alternative will result in significant degradation, then it must be demonstrated that it will allow important economic and social development in accordance to the Antidegradation Implementation Procedure Section II.E. Social and Economic Importance is defined as the social and economic benefits to the community that will occur from any activity involving a new or expanding discharge.</p>	
<p>Identify the affected community: The affected community is defined in 10 CSR 20-7.031(2)(B) as the community "in the geographical area in which the waters are located.: Per the Antidegradation Implementation Procedure Section II.E.1, "the affected community should include those living near the site of the proposed project as well as those in the community that are expected to directly or indirectly benefit from the project."</p> <p>The attached report explains in detail the surrounding community, generally to the south of southeast of the site for 2-4 miles.</p>	
<p>Identify relevant factors that characterize the social and economic conditions of the affected community: Examples of social and economic factors are provided in the Antidegradation Implementation Procedure Section II.E.1., but specific community examples are encouraged.</p> <p>As stated in more detail in the report, the surrounding area has little or no options for purchasing fuel, convenience store items, groceries, nor or there any restaurants in the area. This project supplies all these needs and eliminates the necessity of excess driving to seek such services.</p>	
<p>Describe the important social and economic development associated with the project: Determining benefits for the community and the environment should be site specific and in accordance with the Antidegradation Implementation Procedure Section II.E.1.</p> <p>Up to 88,000 gallons of fuel will be saved annually by eliminating driving excessive distances for services. See report for more.</p>	
<p>PROPOSED PROJECT SUMMARY:</p> <p>Recommendation is to construct an on-site tertiary treatment facility treating 15,000 gallons per day, built in two phases.</p>	
<p>Attach the Antidegradation Review report and all supporting documentation. This is a technical document, which must be signed, sealed and dated by a registered professional engineer of Missouri.</p>	
<p>CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed in consistent with the Antidegradation Implementation Procedure and current state and federal regulations.</p>	
SIGNATURE <i>Eugene A. Fribis</i>	DATE October 20, 2010
PRINT NAME Eugene A. Fribis	LICENSE # : E-17109
TELEPHONE NUMBER WITH AREA CODE 636-464-3610	E-MAIL ADDRESS: gfrbis@fribis.com
<p>OWNER: I have read and reviewed the prepared documents and agree with this submittal.</p>	
SIGNATURE X <i>[Signature]</i>	DATE X 3/3/11
<p>CONTINUING AUTHORITY: I have read and reviewed the prepared documents and agree with this submittal.</p>	
SIGNATURE	DATE

APPENDIX -B GEOHYDROLOGIC EVALUATION:



Missouri Department Of Natural Resources

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

Project ID Number

LWE10094

County

JEFFERSON

Geohydrologic Evaluation of Liquid-Waste Treatment Site

Project **Oscar's Family Restaurant** Quadrangle **SELMA**
Location **NE1/4 NW1/4 NE1/4** Section **33** Township **40 N** Range **6 E**
Additional Location Information **3967 Highway 61, Festus, MO 63028**
Latitude **38 Deg 9 Min 27 Sec** Longitude **90 Deg 21 Min 38 Sec**

Owner: Festus Fuel
2591 Highway 61, Festus, MO 63028

Requestor: Fribis Engineering (630) 464-3610
3520 Jeffco Boulevard, Arnold, MO 63010

Previous Reports Not Applicable

Date
Identification Number
Fiscal Year

Facility Type <input checked="" type="radio"/> Mechanical treatment plant <input type="radio"/> Recirculating filter bed <input type="radio"/> Earthen lagoon with discharge <input type="radio"/> Earthen holding basin <input type="radio"/> Land application <input type="radio"/> Other type of facility	Type of Waste <input type="radio"/> Animal <input checked="" type="radio"/> Human <input type="radio"/> Process or industrial <input type="radio"/> Leachate <input type="radio"/> Other waste type	Funding Source <input checked="" type="radio"/> PPG <input type="radio"/> WWLF-SRF <input type="radio"/> Non-Point Source Other Information: <input type="radio"/> Plans were submitted <input type="radio"/> Site was investigated by NRCS <input type="radio"/> Soil or geotechnical data were submitted
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Date of Field Visit 6/2/2010 **Stream Classification** Gaining Losing No discharge

Overall Geologic Limitations <input type="radio"/> Slight <input type="radio"/> Moderate <input type="radio"/> Severe	Collapse Potential <input checked="" type="radio"/> Not applicable <input type="radio"/> Slight <input type="radio"/> Moderate <input type="radio"/> Severe	Topography <input type="radio"/> < 4% <input type="radio"/> 4% to 8% <input type="radio"/> 8% to 15% <input type="radio"/> > 15%	Landscape Position <input type="radio"/> Broad uplands <input type="radio"/> Ridgetop <input type="radio"/> Hillslope <input checked="" type="radio"/> Narrow ravine <input checked="" type="radio"/> Floodplain <input type="radio"/> Alluvial plain <input type="radio"/> Terrace <input type="radio"/> Sinkhole
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Bedrock: The uppermost bedrock is Ordovician-age Everton Formation.

Surficial Materials: Unconsolidated material existing above bedrock is silty sand residuum (SM/SC).

Project ID Number **LWE10094**

Page 2

Recommended Construction Procedures

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

Required Geologic Exploration

(Missouri Clean Water Commission - 10 CSR 20 - 8.200 Wastewater Treatment Ponds)

Determine Overburden Properties

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

Determine Hydrologic Conditions

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

Notify Geologist

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

Remarks

Oscar's Family Restaurant mechanical treatment plant is located in the floodplain of an unnamed creek that flows through Selma Hollow. The site is approximately 858 feet west of the intersection of US Highway 61 and Interstate 44, and approximately 2.6 miles south of Festus, Missouri.

The site elevation is approximately 500 feet msl. The unnamed creek was observed to exhibit losing conditions. While flow was observed near the mechanical treatment plant upstream to the south, this is probably driven by discharge from a private lake in the headlands of the tributary. Flow was observed to diminish downstream to the north from the mechanical treatment plant. Other streams and tributaries were also observed to be losing. No sinkholes, springs, caves or mines were observed in the vicinity of the site. The Selma Fault is mapped within one mile to the north of the site.

Observations in the vicinity of the site indicate the presence of at least 5-10 feet of residuum derived from dolomite and sandstone. The site visit revealed that the surficial materials consist of lean silty-clayey to sandy alluvium (ML-CL/ SM-SC) with moderate to high permeability.

Local outcrops indicate that the uppermost bedrock is the Ordovician-age Everton Formation, which exhibits moderate to high permeability at the site due to the porous, weakly cemented sandstone that makes up the lower part of the formation. The formation is composed of a light brown to gray, algal to sandy dolomite that overlies a massive, white sandstone. Underlying the Everton Formation is the Ordovician-age Cotter Dolomite, which exhibits low permeability in this area. The Cotter Dolomite is typically a cherty and shaley dolomite in this area.

The site is part of a complex consisting of a gas station and a restaurant with a shared parking area. The complex is built over the natural drainage, with stream flow channeled under the parking area and Highway 61. During the site visit, the present mechanical treatment plant was observed to be operating behind the restaurant. Evidence of recent flash flooding was observed around the facility and in the creek bed. An alternative plant location may need to be determined in order to eliminate future flooding of the facility. Based on the losing nature of the receiving stream and the highly permeable underlying bedrock, this facility receives a severe geologic limitations rating. Should this facility fail to operate properly, regional groundwater supplies could be impacted.

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

Report By: **Blake Smotherman**

Report Date: 6/17/2010

CC WPP, SLRO



**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
FORM B: APPLICATION FOR AN OPERATING PERMIT FOR DOMESTIC OR MUNICIPAL WASTEWATER (≤100,000 gallons per day)

JUN 13 2014

FOR AGENCY USE ONLY

CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED

WATER PROTECTION PROGRAM

PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM

1. THIS APPLICATION IS FOR:

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

An operating permit renewal: Permit #MO- _____ Expiration Date _____

An operating permit modification: Permit #MO- 0093343 Reason: Upgraded plant

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

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

2. FACILITY

NAME Festus Fuel and Food Mart		TELEPHONE NUMBER WITH AREA CODE (636) 937-3181	
ADDRESS (PHYSICAL) 2591 Highway 61	CITY Festus	STATE MO	ZIP CODE 63028
OUTFALL NUMBER For multiple outfalls, this is number _____ of _____			
Estimated (actual) flow: 1,800 gpd, Design Average Flow: 3,000 gpd, Design Peak Hourly Flow: 375 gph			
2.1 Legal description: NE ¼, NW ¼, NE ¼, Sec. 33, T 40, R 6		County Jeffers	
2.2 UTM Coordinates Easting (X): 731259 Northing (Y): 4226582 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)			
2.3 Name of receiving stream: Tributary to Selma Hollow Creek and Mississippi River			

3. OWNER

NAME same		E-MAIL ADDRESS		TELEPHONE NUMBER WITH AREA CODE	
ADDRESS		CITY		STATE	ZIP CODE
3.1 Request review of draft permit prior to public notice? <input type="checkbox"/> YES <input type="checkbox"/> NO					

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

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

5. OPERATOR

NAME Jonathan E. Fribis (upon completion of plant)		CERTIFICATE NUMBER # 9069	
E-MAIL ADDRESS jfribis@fribis.com		TELEPHONE NUMBER WITH AREA CODE 636-464-3610	

6. FACILITY CONTACT

NAME Lino Simon		TITLE Owner	
E-MAIL ADDRESS none		TELEPHONE NUMBER WITH AREA CODE 636-937-3181	

7. DESCRIPTION OF FACILITY

7.1 Describe the facility (attach additional sheet if required) and attach a flow chart showing the influents, treatment facilities and outfalls.
 Bio-Microbics HSMBR to treat 3,000 gallons per day consisting of flow splitter for future expansion if necessary, settling compartment, aeration compartment 4 membrane units with 2 filtrate pumps and 2 blowers. Influent will be directed to the flow splitter and effluent will discharge to a gravity sewer extending to a branch of Selma Creek. See plans for plant details and flow chart.

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

7.3 Design flow for this outfall: 3,000 Total design flow for the facility: 3,000 Actual flow for this outfall: 1,800

7.4 Number of people presently connected or population equivalent (P.E.): 18 Design P.E.: 45

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

8. ADDITIONAL FACILITY INFORMATION

8.1 Facility SIC code: 495 ; Discharge SIC code: 495 .

8.2 Milestone dates:

Date of completion of construction of facility: 8/14

Dates of any construction modifications to the facility (along with description of modification): _____

8.3 Connections to the facility:

Number of units presently connected: Homes 0 Trailers 0 Apartments 0

Other (including industrial) 2 (If industrial, see instructions 8.1)

Number of commercial establishments: 2

Daily number of employees working (total estimate): 9 Daily number of customers/guests (total estimate): 500

8.4 Length of pipe in the sewer collection system? 100 feet or _____ miles (either unit is appropriate.)

8.5 Does any bypassing occur in the collection system or at the treatment facility? Yes No (If yes, explain.)

8.6 Does significant infiltration occur in the collection system? Yes No (If yes, explain and attach proposed repair.)

9. DISCHARGE INFORMATION

9.1 Will the discharge be continuous throughout the year? Yes No

9.2 Discharge will occur during the following months: all

9.3 How many days of the week will the discharge occur? 7

9.4 Is wastewater land-applied? Yes No (If yes, attach Form I.)

9.5 Will chlorine be added to the effluent? Yes No

If chlorine is added, what is the resulting residual? _____ $\mu\text{g/l}$ (micrograms per liter)

9.6 Does this facility discharge to a losing stream or sinkhole? Yes No

9.7 Has a waste load allocation study been completed for this facility? Yes No

10. List all permit violations, including effluent limit exceedances, in the last five years. Attach a separate sheet if necessary. If none, write none.

Existing facility is incapable of achieving compliance with current effluent limitations. Most recent testing in November 30, 2013 exceeded limits for Ammonia and BOD. Many other violations, including missing reports, are available in the St. Louis Regional office.

11. SLUDGE HANDLING, USE AND DISPOSAL

11.1 Is the sludge a hazardous waste as defined by 10 CSR 25? Yes No
 Sludge production, including sludge received from others: 1.53 Design Dry Tons/Year unknown Actual Dry Tons/Year

11.3 Capacity of sludge holding structures:
 Sludge storage provided: _____ cubic feet; _____ days of storage; _____ average percent solids of sludge;
 No sludge storage is provided.

Type of Storage: Holding tank Building
 Basin Other (Please describe) _____
 Concrete Pad

Sludge Treatment:
 Anaerobic Digester Lagoon Composting
 Storage Tank Aerobic Digester Other (Attach description)
 Lime Stabilization Air or Heat Drying

Sludge Use or Disposal:
 Land Application Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years)
 Contract Hauler Incineration
 Hauled to Another Sludge Retained in Wastewater treatment lagoon
 Treatment Facility Other _____ Attach explanation sheet.
 Solid Waste Landfill

Person responsible for hauling sludge to disposal facility
 By Applicant By Others (complete below)

NAME Environmental Consulting & Operations, Inc.	E-MAIL ADDRESS jfribis@fribis.com
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ADDRESS 3520 Jeffco Boulevard	CITY Arnold	STATE MO	ZIP CODE 63010
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CONTACT PERSON Jonathan Fribis	TELEPHONE NUMBER WITH AREA CODE (636) 464-3610	PERMIT NO. MO-
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Sludge use or disposal facility
 By applicant By others (Please complete below.)

NAME Location will vary between Municipal facility and land application	E-MAIL ADDRESS
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ADDRESS	CITY	STATE	ZIP CODE
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CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO. MO-
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Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503?
 Yes No (Please explain)

12. DOWNSTREAM LANDOWNERS - ATTACH ADDITIONAL SHEETS AS NECESSARY. SEE INSTRUCTIONS.

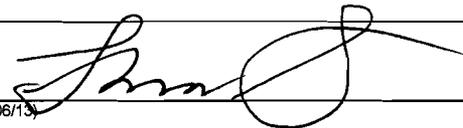
NAME MPC No 14 LLC	E-MAIL ADDRESS
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ADDRESS 9439 Sappington Estates Drive	CITY St. Louis	STATE MO	ZIP CODE 63127
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13. CERTIFICATION

I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law.

NAME AND OFFICIAL TITLE (TYPE OR PRINT) Lino Simon	TELEPHONE NUMBER WITH AREA CODE (636) 937-3181
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SIGNATURE 	DATE SIGNED 6/4/14
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