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- 0124575 |
| Owner: | Northeast Missouri Grain LLC d/b/a POET Biorefining - Macon |
| Address: | 30211 Major Avenue, Macon, MO 63552 |
| Continuing Authority: | Same as above |
| Address: | Same as above |
| Facility Name: | POET Biorefining - Macon |
| Facility Address: | 30211 Major Avenue, Macon, MO 63552 |
| Legal Description: | SEE PAGE TWO |
| UTM Coordinates: | SEE PAGE TWO |
| Receiving Stream: | SEE PAGE TWO |
| First Classified Stream and ID: | SEE PAGE TWO |
| USGS Basin & Sub-watershed No.: | SEE PAGE TWO |

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

## FACILITY DESCRIPTION

Industrial - SIC #2869, #2813 and #4952
The use or operation of this facility shall not require the supervision of a **Certified Operator.**
This facility produces ethanol by fermentation of corn. Industrial process wastewater flows, stormwater associated with industrial activities on site and domestic wastewater are treated and discharged from this facility.

This permit authorizes only wastewater and stormwater 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 Sections 640.013, 621.250, and 644.051.6 of the Law.

APRIL 1, 2015
Effective Date

JULY 29, 2015
Modification Date

Sara Parker Pauley, Director, Department of Natural Resources

JUNE 30, 2017
Expiration Date

John Madras, Director, Water Protection Program

**FACILITY DESCRIPTION (continued):**

Outfall #001 Terminated January 4, 2013. This outfall was an internal monitoring location between the basins.

Outfall #002 – Industrial Process Wastewater – SIC #2869
Reverse osmosis reject water / cooling tower blowdown / chlorination / dechlorination
Design flow is 0.11 MGD.
Actual flow is 0.24 MGD.

| | |
|---|---|
| Legal Description: | NW¼, NW¼, Sec 17, T57N, R13W; Macon County |
| UTM Coordinates: | X=552590, Y=4399842 |
| Receiving Stream: | Tributary to Middle Fork Salt River |
| First Classified Stream and ID: | 8-20-13 MUDD V1.0 (C) (3960) |
| USGS Basin & Sub-watershed #: | (07110006-0203) |

Outfall #003 – Industrial Process Wastewater - SIC #2869, SIC #2813
Methonator / Five aerated lagoons / polishing lagoon / compressed $CO_2$ for pH adjustments / sludge retained in lagoons
Design population equivalent is 1,600.
Design flow is 0.16 MGD.
Actual flow is 0.12 MGD.

| | |
|---|---|
| Legal Description: | NW¼, NW¼, Sec 17, T57N, R13W; Macon County |
| UTM Coordinates: | X=552547, Y=4399842 |
| Receiving Stream: | Tributary to Middle Fork Salt River |
| First Classified Stream and ID: | 8-20-13 MUDD V1.0 (C) (3960) |
| USGS Basin & Sub-watershed #: | (07110006-0203) |

Outfall #004 – Domestic wastewater and sludge - SIC #4952
Septic tank / single cell lagoon / sludge retained in lagoon (removed by contract hauler) / spray irrigation / stormwater runoff
Design population equivalent is 8.
Design flow is 0.00075 MGD, including 1-in-10 year rainfall (273,750 gal/year).
Actual flow is 0.00057 MGD (208,050 gal/year).
Design sludge production is 0.18 dry tons/year.

| | |
|---|---|
| Legal Description: | NW¼, NW¼, Sec 17, T57N, R13W; Macon County |
| UTM Coordinates: | X=552585, Y=4399907 |
| Receiving Stream: | Tributary to Middle Fork Salt River |
| First Classified Stream and ID: | 8-20-13 MUDD V1.0 (C) (3960) |
| USGS Basin & Sub-watershed #: | (07110006-0203) |

Receiving Stream Watershed: a gaining stream setting that flows into Tributary to Middle Fork Salt River (C) (3960).

Facility Type:
No-discharge Storage and Irrigation System for intermittent flows into gaining stream.

| Design Basis: | Avg Annual | |
|---|---|---|
| Design dry weather flows: | 570 | gpd |
| Design with 1-in-10 year flows: | 750 | gpd |
| Design PE: | 8 | |

Storage Basin/Tank:
Freeboard for basin: 1 feet
Storage volume (minimum to maximum water levels): 32,256 – 96,768 gallons

Storage Capacity (in Days):
Design for Dry weather flows: 170* days
Design with 1-in 10 year flows: 129* days
* #days = (maximum storage capacity/ flow) x 365

**FACILITY DESCRIPTION (continued):**

Land Application:
Irrigation Volume/year: 560,620 gallons at design loading (including 1-in-10 year flows)
Irrigation areas: 11 acres at design loading (11 acres total available)
Application rates: 0.2 inch/hour; 1.0 inch/day; 3.0 inches/week; 24 inches/year
Field slopes: less than 10 percent
Equipment type: Sprinklers
Vegetation: Grass/Hay
Application rate is based on: Hydraulic loading rate

Outfall #005 – Stormwater Runoff Industrial Area- SIC #2869, SIC #2813
Stormwater collection basins / sludge retained in basin /stormwater runoff
Design flow is 0.376 MGD. (based on design capacity of stormwater detention basin and ~5 acre drainage @ 5 inch, 24 hour – 10 year rainfall event)
Actual flow is based on precipitation.

| | |
|---|---|
| Legal Description: | NW¼, NW¼, Sec 17, T57N, R13W; Macon County |
| UTM Coordinates: | X=552393, Y=4399767 |
| Receiving Stream: | Tributary to Middle Fork Salt River |
| First Classified Stream and ID: | 8-20-13 MUDD V1.0 (C) (3960) |
| USGS Basin & Sub-watershed #: | (07110006-0203) |

Outfall #006 – Stormwater Runoff Grain Receiving and Storage Bins Area – SIC #2869, SIC #2813
Stormwater runoff / sheet flow and sump pump discharge to basin / sludge retained in basin
Design flow is 2.3 MGD (17 acres drainage @ 5 inch, 24 hour – 10 year rainfall event)
Actual flow is based on precipitation.

| | |
|---|---|
| Legal Description: | NW¼, NW¼, Sec 17, T57N, R13W; Macon County |
| UTM Coordinates: | X=552540, Y=4400125 |
| Receiving Stream: | Tributary to Middle Fork Salt River |
| First Classified Stream and ID: | 8-20-13 MUDD V1.0 (C) (3960) |
| USGS Basin & Sub-watershed #: | (07110006-0203) |

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

**PART 1 – TOTAL SUSPENDED SOLIDS.** This part of Section A addresses the wasteload allocation issued to this facility in the Total Maximum Daily Load (TMDL) report for sediment discharges to the Middle Fork Salt River (P) (0121). The TMDL grants a wasteload allocation to the entire facility, regardless of the number of outfalls. Therefore, the cumulative discharge of total suspended solids from all outfalls must comply with the final effluent limitation in the table below, which is the wasteload allocation from the TMDL.

| **ALL OUTFALLS** | **TABLE A-1. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS** | | | | | |
|---|---|---|---|---|---|---|
| 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 **April 1, 2015**, 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) (Note 1, Page 4) | UNITS | FINAL EFFLUENT LIMITATIONS | | | MONITORING REQUIREMENTS | |
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| Flow | MGD | * | | * | once/month | Note 1, Page 4 |
| Total Suspended Solids | mg/L | * | | * | once/month | |
| Total Suspended Solids | lbs/day | 356 | | 216 | once/month | |
| MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2015. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |

Note 1 - In order to determine compliance the wasteload allocations listed as pounds per day (lbs/day) in Table A-1, the permittee shall follow the method for sample collection and analyses described in the narrative below.

1. The permittee shall measure or estimate flow and measure total suspended solids in milligrams per liter (mg/L) at each outfall (Outfall #002, Outfall #003, Outfall #004, Outfall #005, Outfall #006). This should result in a specific flow value and total suspended solids value associate with each individual outfall. If an outfall does not discharge within a given sampling and reporting period, then report “no-discharge” on the discharge monitoring reports associated with the individual outfall tables in the following pages of the permit.
2. The permittee shall convert the total suspended solids values measured in step 1 from mg/L to lbs/day. This should result in a specific total suspended solids value in lbs/day for each individual outfall. The following formula should be used for the conversion: (Flow in MGD) x (TSS in mg/L) x (Conversion factor of 8.34) = (TSS in lbs/day).
3. The permittee shall add all of the values calculated in step 2 together to get a total suspended solids value in lbs/day associated with the discharge from the entire site. This should result in a single value to be used to determine compliance with the wasteload allocations in lbs/day listed in Table A-1 above.

It will be considered a violation to exceed the effluent limitations listed in Table A-1. If this method for sample collection and analyses is conducted more than once in a month, then the permittee shall submit the results of the analyses for all samples collected during the monthly report submittal.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

**PART 2 – INDUSTRIAL PROCESS WASTEWATER DISCHARGES.** This part of section A addresses all outfalls that discharge industrial process wastewater.

| **OUTFALL #002** | **TABLE A-2. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS** | | | | | |
|---|---|---|---|---|---|---|
| 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 **April 1, 2015,** 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 |
| Chemical Oxygen Demand | mg/L | * | | * | once/month | grab |
| pH – Units | SU | ** | | ** | once/month | grab |
| Temperature | °F | 90 | | 90 | once/month | grab |
| Sulfate plus Chloride | mg/L | 1,000 | | 1,000 | once/month | grab |
| Chloride | mg/L | * | | * | once/month | grab |
| Chlorine, Total Residual (Note 1, Page 7) | mg/L | 0.017 (0.13ML) | | 0.008 (0.13ML) | once/month | grab |
| Oil & Grease | mg/L | 15 | | 10 | once/month | grab |
| MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2015. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |
| Total Phosphorus | mg/L | * | | * | once/quarter*** | grab |
| Total Nitrogen | mg/L | * | | * | once/quarter*** | grab |
| MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JULY 28, 2015. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

**PART 2 – INDUSTRIAL PROCESS WASTEWATER DISCHARGES (continued)**

| **OUTFALL #003** | **TABLE A-3. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS** | | | | | |
|---|---|---|---|---|---|---|
| The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective on **April 1, 2015**, and remain in effect through **March 31, 2017**. Such discharges shall be controlled, limited and monitored by the permittee as specified below: | | | | | | |
| EFFLUENT PARAMETER(S) | UNITS | INTERIM 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 | 80 | | 30 | once/month | grab |
| pH – Units | SU | ** | | ** | once/month | grab |
| Ammonia as N<br>(April 1 – Sept 30)<br>(Oct 1 – March 31) | mg/L | 6.3<br>10.0 | | 2.4<br>3.2 | once/month | grab |
| Oil & Grease | mg/L | 15 | | 10 | once/month | grab |
| MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2015. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |
| Total Phosphorus | mg/L | * | | * | once/quarter*** | grab |
| Total Nitrogen | mg/L | * | | * | once/quarter*** | grab |
| MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JULY 28, 2015. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

**PART 2 – INDUSTRIAL PROCESS WASTEWATER DISCHARGES (continued)**

| **OUTFALL #003** | **TABLE A-4. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS** | | | | | |
|---|---|---|---|---|---|---|
| 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 **April 1, 2017**, 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 | 80 | | 30 | once/month | grab |
| pH – Units | SU | ** | | ** | once/month | grab |
| Ammonia as N<br>(April 1 – Sept 30)<br>(Oct 1 – March 31) | mg/L | 5.8<br>10.0 | | 1.2<br>2.8 | once/month | grab |
| Oil & Grease | mg/L | 15 | | 10 | once/month | grab |
| MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2017. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |
| Total Phosphorus | mg/L | * | | * | once/quarter*** | grab |
| Total Nitrogen | mg/L | * | | * | once/quarter*** | grab |
| MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JULY 28, 2017. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |

* Monitoring requirement only.
** pH is measured in pH units and is not to be averaged. 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** | **Parameters** | **Report is Due** |
| First | January, February, March | Sample at least once during any month of the quarter | April 28th |
| Second | April, May, June | Sample at least once during any month of the quarter | July 28th |
| Third | July, August, September | Sample at least once during any month of the quarter | October 28th |
| Fourth | October, November, December | Sample at least once during any month of the quarter | January 28th |

Note 1 - This permit contains a Total Residual Chlorine (TRC) limit.

(a) This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.

(b) Disinfection is required year-round unless the permit specifically states that "Final limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31." If your permit does not require disinfection during the non-recreational months, do not chlorinate in those months.

(c) Do not chemically dechlorinate **if it is not needed to meet the limits in your permit.**

(d) If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as "0 µg/L" TRC.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

**PART 3 – DOMESTIC WASTEWATER NO-DISCHARGE LAND APPLICATION SYSTEM.** This part of section A addresses the domestic wastewater treatment and disposal system. This system is operated as a no-discharge system with land application of the wastewater.

| **OUTFALL #004** | **TABLE A-5. IRRIGATION SYSTEM LIMITATIONS AND MONITORING REQUIREMENTS** | | | | | |
|---|---|---|---|---|---|---|
| The permittee is authorized to conduct land application of wastewater as specified in the application for this permit. The final limitations shall become effective upon issuance and remain in effect until expiration of the permit. The land application of wastewater shall be controlled, limited and monitored by the permittee as specified below: | | | | | | |
| EFFLUENT PARAMETER(S) (Note 1, Page 9) | UNITS | | | | MONITORING REQUIREMENTS | |
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| **Storage Basin Operational Monitoring** | | | | | | |
| Storage Basin Freeboard (Note 2, Page 9) | Feet | * | | | once/month | measure |
| MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2015. | | | | | | |
| **Wastewater Land Application Monitoring** | | | | | | |
| Irrigation Period | Hours | * | | | daily^ | total |
| Volume Irrigated | Gallons | * | | | daily^ | total |
| Application Area | Acres | * | | | daily^ | total |
| Application Rate | Inches/ Acre | * | | | daily^ | total |
| MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JULY 28, 2015. | | | | | | |
| **Soil Monitoring** (Note 3, Page 9) | | | | | | |
| pH – Units | SU | * | | | once/5 years | composite |
| Nitrate Nitrogen as N | mg/kg | * | | | once/5 years | composite |
| Available Phosphorus as P (Bray P-1 Method) | mg/kg | * | | | once/5 years | composite |
| Total Sodium | mg/kg | * | | | once/5 years | composite |
| Exchangeable Sodium | % | * | | | once/5 years | composite |
| MONITORING REPORTS SHALL BE SUBMITTED ONCE EVERY FIVE YEARS; THE FIRST REPORT IS DUE JANUARY 28, 2020. | | | | | | |

* Monitoring requirement only.
** See table below for quarterly sampling.

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

^ Sample daily during each land application event.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

**PART 3 – DOMESTIC WASTEWATER NO-DISCHARGE LAND APPLICATION SYSTEM** (continued)

Note 1 – **No-discharge facility requirements**. Wastewater shall be stored and land applied during suitable conditions so that there is no discharge from the storage basin(s) or irrigation site. An emergency discharge may occur when excess wastewater has accumulated above feasible irrigation rates due to precipitation exceeding the 1-in-10-year, 365-day rainfall or the 25-year, 24-hour storm event. Because this is a no-discharge facility, a removal efficiency of 100% is achieved and no influent monitoring is required.

Note 2 – Storage Basin freeboard shall be reported as Storage Basin water level in feet below the overflow level.

Note 3 – Sample the upper 6 to 8 inches of soil. Composite samples shall be collected from each permitted land application site. See Part E. Land Application Provisions, item #13(e) Soil Monitoring for additional guidance.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

**PART 4 – STORMWATER DISCHARGES.** This part of section A addresses all outfalls that discharge stormwater associated with

| **OUTFALL #005 & #006** | **TABLE A-6. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS** | | | | | |
|---|---|---|---|---|---|---|
| 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 **April 1, 2015**, 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) (Note 1, Page 10) | UNITS | FINAL EFFLUENT LIMITATIONS | | | MONITORING REQUIREMENTS | |
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| Flow | MGD | * | | | once/quarter**** | 24 hr. estimate |
| Precipitation (Note 2, Page 10) | Inches | * | | | once/day | measure |
| Biochemical Oxygen Demand$_5$ | mg/L | ** | | | once/quarter**** | grab |
| pH – Units | SU | *** | | | once/quarter**** | grab |
| Oil & Grease | mg/L | ** | | | once/quarter**** | grab |
| Nitrate plus Nitrite Nitrogen | mg/L | ** | | | once/quarter**** | grab |
| Aluminum, Total Recoverable | µg/L | ** | | | once/quarter**** | grab |
| Iron, Total Recoverable | µg/L | ** | | | once/quarter**** | grab |
| Total Phosphorus | mg/L | * | | | once/quarter**** | grab |
| Total Nitrogen | mg/L | * | | | once/quarter**** | grab |
| MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JULY 28, 2015. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |

* Monitoring requirement only.
** Monitoring requirement with a benchmark value. See special condition #11.
*** 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** | **Parameters** | **Report is Due** |
| First | January, February, March | Sample at least once during any month of the quarter | April 28th |
| Second | April, May, June | Sample at least once during any month of the quarter | July 28th |
| Third | July, August, September | Sample at least once during any month of the quarter | October 28th |
| Fourth | October, November, December | Sample at least once during any month of the quarter | January 28th |

Note 1 - For retention BMPs (Outfall #005), stormwater samples shall be collected once per quarter when a discharge occurs.

For flow-through BMPs (Outfall #006), stormwater samples shall be collected once per quarter within the first 60 minutes of discharge resulting from a precipitation event greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable precipitation event. Precipitation events include rainfall as well as run-off from the melting of frozen precipitation.

If a precipitation event does not occur within the reporting period, report as **no discharge**. The total amount of precipitation should be noted from the event from which the samples were collected.

Note 2 - Sample and report only one precipitation value for the entire site.

B. WHOLE EFFLUENT TOXICITY REQUIREMENTS (continued)

| OUTFALL #002 & #003 | TABLE B-1. WHOLE EFFLUENT TOXICITY FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS | | | | | |
|---|---|---|---|---|---|---|
| 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 **Effective Date** 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 |
| Acute Whole Effluent Toxicity | $TU_a$ | * | | | once/year | composite** |
| MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE AUGUST 28, 2015. | | | | | | |

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

1. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:

| SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT | | | | | |
|---|---|---|---|---|---|
| OUTFALL | AEC | Acute Toxic Unit ($TU_a$) | FREQUENCY | SAMPLE TYPE | MONTH |
| #002 & #003 | 100% | * | once/year | composite** | Any |

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

| DILUTION SERIES | | | | | | |
|---|---|---|---|---|---|---|
| 100% | 50% | 25% | 12.5% | 6.25% | (Control) 100% upstream, if available | (Control) 100% Lab Water, also called synthetic water |

(a) Freshwater Species and Test Methods
(1) Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the fifth edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012, 2002; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour static non-renewal toxicity tests with the following vertebrate species:

- The fathead minnow, *Pimephales promelas* (Acute Toxicity Test Method 2000.0).

And the following invertebrate species:

- The daphnid, *Ceriodaphnia dubia* (Acute Toxicity Test Method 2002.0).

(2) Chemical and physical analysis of an upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available, synthetic laboratory control water may be used.
(3) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
(4) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analysis performed upon any other effluent concentration.

B. WHOLE EFFLUENT TOXICITY REQUIREMENTS (continued)

(5) All chemical analyses shall be performed and results shall be recorded in the appropriate field of the report form. The parameters for chemical analysis include Temperature (°C), pH (SU), Conductivity (µmohs/cm), Dissolved Oxygen (mg/L), Total Residual Chlorine (mg/L), Un-ionized Ammonia (mg/L), Total Alkalinity (mg/L), Total Hardness (mg/L), and Sulfate plus Chloride.

(b) Reporting of Acute Toxicity Monitoring Results

(1) WET test results shall be submitted to the Northeast Regional Office, or by eDMR, with the permittee's Discharge Monitoring Reports annually by January 28 of each year. The submittal shall include:

(i) A full laboratory report for all toxicity testing.

(ii) Copies of chain-of-custody forms.

(iii) The WET form provided by the Department upon permit issuance.

(2) The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration, 50 Percent ($LC_{50}$) is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.

(c) Permit Reopener for Acute Toxicity

In accordance with 40 CFR Parts 122 and 124, this permit may be modified to include effluent limitations or permit conditions to address acute toxicity in the effluent or receiving waterbody, as a result of the discharge; or to implement new, revised, or newly interpreted water quality standards applicable to acute toxicity.

C. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached PART I AND PART III standard conditions dated AUGUST 1, 2014 AND MARCH 1, 2014, RESPECTIVELY, and hereby incorporated as though fully set forth herein.

D. SPECIAL CONDITIONS

1. This permit establishes final ammonia limitations based on Missouri's current Water Quality Standard. On August 22, 2013, the U.S. Environmental Protection Agency (EPA) published a notice in the Federal Register announcing of the final national recommended ambient water quality criteria for protection of aquatic life from the effects of ammonia in freshwater. The EPA's guidance, Final Aquatic Life Ambient Water Quality Criteria for Ammonia – Fresh Water 2013, is not a rule, nor automatically part of a state's water quality standards. States must adopt new ammonia criteria consistent with EPA's published ammonia criteria into their water quality standards that protect the designated uses of the water bodies. The Department of Natural Resources 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 .

2. This permit may be reopened and modified, or alternatively revoked and reissued, to:

(a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

(1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

(2) controls any pollutant not limited in the permit.

(b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.

(c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

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

3. All outfalls must be clearly marked in the field.

4. Water Quality Standards

(a) To the extent required by law, discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.

(b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

D. SPECIAL CONDITIONS (continued)

(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.

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. Reporting of Non-Detects
(a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
(b) The permittee shall not report a sample result as “Non-Detect” without also reporting the detection limit of the test. Reporting as “Non Detect” without also including the detection limit will be considered failure to report, which is a violation of this permit.
(c) The permittee shall provide the “Non-Detect” sample result using the less than sign and the minimum detection limit (e.g. <10).
(d) The permittee shall use one-half of the detection limit for the non-detect result when calculating and reporting monthly averages.
(e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.

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

9. Any pesticide discharge from any point source shall comply with the requirements of Federal Insecticide, Fungicide and Rodenticide Act, as amended (7 U.S.C. 136 ET. SEQ.) and the use of such pesticides shall be in a manner consistent with its label.

10. The permittee shall implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must be prepared and implemented upon permit issuance. The SWPPP must be kept on-site and should not be sent to the department unless specifically requested. The SWPPP must be reviewed and updated, if needed, every five (5) years or as site conditions change. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document: Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (Document number EPA 833-B-09-002) published by the United States Environmental Protection Agency (USEPA) in February 2009.
The SWPPP must include the following:
(a) A listing of specific Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter stormwater. The BMPs at the facility should be designed to meet this value during rainfall event up to the 10 year, 24 hour rain event.

D. SPECIAL CONDITIONS (continued)

(b) The SWPPP must include a schedule for once per month site inspections and brief written reports. The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Deficiencies must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report, including photographs. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to department personnel upon request.
(c) A provision for designating an individual to be responsible for environmental matters.
(d) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of the department.

11. This permit stipulates pollutant benchmarks applicable to your discharge. The benchmarks do not constitute direct numeric effluent limitations; therefore, a benchmark exceedance alone is not a permit violation. Benchmark monitoring and visual inspections shall be used to determine the overall effectiveness of SWPPP and to assist you in knowing when additional corrective action may be necessary to protect water quality. If a sample exceeds a benchmark concentration you must review your SWPPP and your BMPs to determine what improvements or additional controls are needed to reduce that pollutant in your stormwater discharge(s).

| **Outfall #005 & #006** | |
|---|---|
| **Parameter** | **Benchmark** |
| $BOD_5$ | 80 mg/L |
| Oil & Grease | 10 mg/L |
| Nitrate plus Nitrite Nitrogen | 0.68 mg/L |
| Aluminum, Total Recoverable | 0.75 mg/L |
| Iron, Total Recoverable | 1.0 mg/L |

Any time a benchmark exceedance occurs a Corrective Action Report (CAR) must be completed. A CAR is a document that records the efforts undertaken by the facility to improve BMPs to meet benchmarks in future samples. CARs must be retained with the SWPPP and available to the department upon request. If the efforts taken by the facility are not sufficient and subsequent exceedances of a benchmark occur, the facility must contact the department if a benchmark value cannot be achieved. Failure to take corrective action to address a benchmark exceedance and failure to make measureable progress towards achieving the benchmarks is a permit violation.

12. Permittee shall adhere to the following minimum Best Management Practices (BMPs):
(a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of storm water from these substances.
(b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
(c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
(d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
(e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property. This could include the use of straw bales, silt fences, or sediment basins, if needed, to comply with monitoring requirements and effluent limits.
(f) Ensure that adequate provisions are provided to prevent surface water intrusion into the storage basin, to divert stormwater runoff around the storage basin, and to protect embankments from erosion.

13. The purpose of the SWPPP and the BMPs listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effective in preventing pollution [10 CSR 20-2.010(56)] of waters of the state, and corrective actions means the facility took steps to eliminate the deficiency.

14. Before releasing water that has accumulated in secondary containment areas it must be examined for hydrocarbon odor and presence of a sheen. On-site remediation may take place prior to testing. If the presence of hydrocarbons is indicated, this water must be tested for Total Petroleum Hydrocarbons (TPH). The analytical method for testing TPH must comply with EPA approved testing methods listed in [40 CFR 136] and the water must be tested prior to release to ensure compliance with water quality standards. If the concentration for TPH exceeds 10mg/L, the water shall be taken to a WWTP for treatment.

15. Release of a hazardous substance must be reported to the department in accordance with 10 CSR 24-3.010. A record of each reportable spill shall be retained with the SWPPP and made available to the department upon request.

E. LAND APPLICATION PROVISIONS

The following provisions apply to the industrial wastewater and sludge treatment system described as Outfall #003.

1. This permit does not authorize land application of industrial wastewater or industrial sludge.

2. This permit does not authorize the discharge of industrial sludge.

3. Sludge Removal and Disposal Plan. At least 180 days prior to planned removal of sludge from the lagoon, the permittee shall submit a proposed sludge use or disposal plan for department review and approval. If the sludge will be land applied, a revised permit application must be submitted using permit application forms A, C, and R; (and D, where applicable). All land application sites must be public noticed and permitted prior to use.

4. Lagoon Closure Requirements. Prior to taking the lagoon out of service, a lagoon closure plan shall be submitted for department review and approval in accordance with 10 CSR 20-6.015(5). The lagoon must be closed within two years after ceasing to be used for wastewater treatment. All sludge shall be removed prior to closure.

The following provisions apply to the domestic wastewater treatment system described as Outfall #004.

5. Emergency Discharge. An emergency discharge from wastewater storage structures may only occur if rainfall exceeds the 1 in 10 year (Data taken from the Missouri Climate Atlas) or the 24 hour, 25 year (Data taken from NRCS Urban Hydrology for Small Watersheds) rainfall events. **Discharge for any other reason shall constitute a permit violation and shall be reported in accordance with Standard Conditions, Part 1, Section B.2.b.** Monitoring shall take place once in the first six (6) hours of discovery of the discharge and then once per day following the initial sampling period until the discharge ceases. The facility shall submit test results, along with the number of days the storage basin(s) has discharged during the month, to the Northeast Regional Office by the 28th day of the month after the discharge ceases. Permittee shall monitor for the following constituents:

| **Constituent** | **Units** |
|---|---|
| Flow | MGD |
| Biochemical Oxygen Demand$_5$ | mg/L |
| Total Suspended Solids | mg/l |
| Ammonia as N | mg/L |
| pH – Units | SU |
| Oil & Grease | mg/L |
| *E. coli* | #/100mL |

6. Public access to storage areas and land application sites must be controlled by either positive barriers or remoteness of site.

7. The permittee shall develop, maintain and implement an Operation and Maintenance (O&M) Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems, including key operating procedures, an aerial or topographic site map with the permitted features, land application fields, and irrigation buffer zones marked, and a brief summary of the operation of the facility. The O & M manual shall be made available to the operator and available to the department upon request. The O&M Manual shall be reviewed and updated at least every five years.

8. The berms of the storage basin(s) shall be mowed and kept free of any deep-rooted vegetation, animal dens, or other potential sources of damage to the berms.

9. The facility shall ensure that adequate provisions are provided to prevent surface water intrusion into the storage basin(s) and to divert stormwater runoff around the storage basin(s) and protect embankments from erosion.

10. Lagoons and earthen basins shall have a liner that is designed, constructed and maintained in accordance with 10 CSR 20-8.020(13)(A)4. If operating records indicate excessive percolation, the department may require a water balance test in accordance with 10 CSR 20-8.020(16) or other investigations to evaluate adequacy of the lagoon seal. The department may require corrective action as necessary to eliminate excess seepage.

E. LAND APPLICATION PROVISIONS (continued)

11. Land Application System.
    (a) This special condition does not apply to fertilizer products that are exempted under the Missouri Clean Water Law and regulations, 10 CSR 20-6.015(3)(B)8.
    (b) Permitted Sites. This permit authorizes land application of wastewater and sludge by the permittee to those sites listed in the "Facility Description" of this permit. Land application of wastewater and sludge by a contract hauler to sites owned, rented, or leased by the permittee must also be listed in the "Facility Description" unless the contract hauler is permitted. Land applications by contract hauler to sites that are not owned, rented, or leased by the permittee are not required to be listed in this permit. Only those pollutants listed in the permit application may be land applied. Permittee requests for additional sites must follow permit modification procedures prior to land application. Additionally, the O&M Manual shall include all additional land application site(s) listed in this permit.
    (c) Storage Basins. The minimum and maximum operating water levels for the storage basin(s) shall be clearly marked. Each storage basin shall be operated so that the maximum water elevation does not exceed upper operating level. Storage basins shall be lowered to the minimum operating level prior to November 30 each year. Storage basins shall be inspected monthly for structural integrity and leaks.
    (d) Public Access Restrictions. This permit does not authorize application of wastewater and sludge to areas to public use areas.
    (e) Soil Monitoring.
        (1) Composite soil samples shall be collected every five years from each field listed in this permit where land application has occurred in the last 12 months. No land application shall occur on fields listed in this permit if soil sample results are more the five (5) years old.
        (2) Soil sampling shall be in accordance with University of Missouri (MU) Guides G9215, Soil Sampling Pastures or G9217, Soil Sampling Hayfields and Row Crops or other methods approved by the department. The recommendation of one composite sample per 20 acres in G9215 and G9217 is not required by this permit, however, this is a useful method to identify soil fertility fluctuations in large fields due to past management practices, soil type, and variability of crop yields. There shall be at least one composite sample per 80 acres.
        (3) Testing shall conform to Recommended Chemical Soil Testing Procedures for North Central Region (North Central Regional Research Publication 221 Revised), or Soil Testing in Missouri (MU Extension Guide EC923), or other methods approved by the department.

12. Land Application Requirements.
    (a) Wastewater land applications shall not exceed agronomic rates to ensure agricultural use of nutrients and prevent contamination of surface and groundwater. The agronomic rate is the amount of wastewater applied to a field to supply the amount of nutrients to meet to meet the crops fertilizer needs for that year.
    (b) No land application shall occur when the soil is frozen, snow covered, or saturated. There shall be no application during a precipitation event or if a precipitation event that is likely to create runoff is forecasted to occur within 24 hours of a planned application.
    (c) Land application shall occur only during daylight hours.
    (d) Land application fields shall be checked daily during land application for runoff. Sites that utilize spray irrigation shall monitor for the drifting of spray across property lines.
    (e) Setback distances from sensitive features. There shall be no land application within:
        (1) 300 feet of any well, sinkhole, losing stream, wetland, or cave entrance, water supply impoundment or stream intake;
        (2) 150 feet of an occupied residence, public building, or public use area;
        (3) 50 feet of gaining perennial or intermittent stream, public or privately owned pond or lake;
        (4) 50 feet of property line or public road.
    (f) Wastewater application on slopes exceeding 10%, the hourly application rate shall not exceed one-half (1/2) the design sustained permeability and in no case shall exceed one-half (1/2) inch per hour.
    (g) Land application equipment shall be visually inspected daily during land application to check for equipment malfunctions and leaks. The application system shall be operated so as to provide uniform distribution of wastes over the entire land application site and shall be capable of applying the annual design flow during an application period of less than 100 days or 800 hours per year. Land application equipment shall be calibrated at least once annually.
    (h) The irrigation system shall have automatic shut off device to shut down the system due to malfunction.
    (i) Stormwater runoff locations from the irrigation sites must be marked in field and on a topographic map. The map shall be kept onsite and available to the department upon request.

E. LAND APPLICATION PROVISIONS (continued)

13. Record Keeping
    (a) A daily land application log shall be prepared and kept on file at the permittee office location for each application site showing dates of application, weather condition (sunny, overcast, raining, below freezing etc…), soil moisture condition, application method.
    (b) A record of monthly visual storage structure inspections shall be maintained.
    (c) A record of land application equipment inspections and calibrations as well as land application field inspections shall be maintained.
    (d) A record of all PAN calculations.
    (e) All records and monitoring results shall be maintained for at least five years and shall be made available to the department upon request.

F. SCHEDULE OF COMPLIANCE

The facility shall attain compliance with final effluent limitations (ammonia as N) for **Outfall #003** as soon as reasonably achievable or no later than **two (2) year** of the effective date of this permit.

1. Within six months of the effective date of this permit, the permittee shall report progress made in attaining compliance with the final effluent limits.

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

3. Within **2 years** of the effective date of this permit, the permittee shall attain compliance with the final effluent limits for Outfall #003.

Please submit progress reports to the Missouri Department of Natural Resources, Northeast Regional Office, 1709 Prospect Drive, Macon, Missouri, 63552.

# MISSOURI DEPARTMENT OF NATURAL RESOURCES
# STATEMENT OF BASIS
# MO-0124575
# POET BIOREFINING MACON

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 Statement of Basis 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 Statement of Basis is not an enforceable part of an operating permit. This Statement of Basis gives pertinent information regarding modification(s) to the above listed operating permit.

## Part I – Facility Information

Facility Type: Industrial Facility SIC Code(s): #2813, 2869, & 4952

Facility Description:
This facility produces Ethanol by fermentation of corn. Outfall #001 was eliminated because it was an internal monitoring point between stormwater basins. There are currently five active outfalls. The process wastewater discharges from outfall #002 are generated from the reverse osmosis reject water and cooling water blowdown with a design flow of 0.11MGD. Discharges from outfall #003 are also process wastewater that are generated from a Methonator, five aerated lagoons, a polishing cell and a compressed carbon dioxide ($CO_2$) with a design flow of 0.16 MGD. Discharges from outfall #004 are domestic wastewater that is generated from septic tank, one cell lagoon and a spray irrigation system to serve Poet's employees. Discharges from outfalls #005 & #006 are stormwater runoff generated from the plant.

## Part II – Modification Rationale

This operating permit is hereby modified to reflect the following revisions necessary to clarify and correct conditions of the permit:

1. Section A, Part 1 on page 4 of the permit has been modified to clarify the total suspended solids effluent limitation and how to comply with that effluent limitation. Table A-1 now contains monitoring for flow and total suspended solids in milligram per liter. These two parameters will be used in the method for determining compliance with the wasteload allocation established in the Total Maximum Daily Load (TMDL) report for the Middle Fork Salt River (P) (0121). This wasteload allocation is listed in pounds per day. Note 1 associated with Table A-1 now defines the method for determining compliance. This is an effort to better inform the permittee of the requirement associated with total suspended solids and to help the department with compliance tracking.
2. The requirements associated with the no-discharge land application system for treatment of domestic wastewater has been revised to mirror the requirements established for strictly domestic wastewater treatment facilities conducting wastewater irrigation. The original language was suited for industrial land application sites and is not applicable to the activity occurring at this facility. Changes include removal of the emergency discharge effluent limitations table. The lagoon is not allowed to discharge and wastewater must be land applied. In cases where discharges occur, monitoring for certain parameters is required in the narrative special conditions associated with land application.
3. Related to the land application conditions, the narrative special condition requiring nutrient monitoring for species of nitrogen has been removed. This nutrient monitoring requirement is applicable to facilities that designed an irrigation system to land apply wastewater at a rate of greater than 24 inches per year. Since this facility is design to land apply up to a maximum of 24 inches per year, this condition does not apply.

No other changes were made at this time.

## Part III – Administrative Requirements

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

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

☒ - The Public Notice period for this operating permit began on May 1, 2015 and ended on June 1, 2015. No comments were received during this Public Notice period.

**DATE OF STATEMENT OF BASIS**: APRIL 23, 2015

**COMPLETED BY:**

**LOGAN COLE, ENVIRONMENTAL SPECIALIST**
**MISSOURI DEPARTMENT OF NATURAL RESOURCES**
**WATER PROTECTION PROGRAM**
**OPERATING PERMITS SECTION - INDUSTRIAL UNIT**
**(573)751-5827**
**logan.cole@dnr.mo.gov**

# MISSOURI DEPARTMENT OF NATURAL RESOURCES
# FACT SHEET
# FOR THE PURPOSE OF RENEWAL
# OF
# MO-0124575
# POET BIOREFINING MACON

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 an industrial facility.

## Part I. FACILITY INFORMATION

Facility Type: Industrial Facility SIC Code(s): 2813, 2869, & 4952

FACILITY DESCRIPTION:
This facility produces Ethanol by fermentation of corn. Outfall #001 was eliminated because it was an internal monitoring point between stormwater basins. There are currently five active outfalls. The process wastewater discharges from outfall #002 are generated from the reverse osmosis reject water and cooling water blowdown with a design flow of 0.11MGD. Discharges from outfall #003 are also process wastewater that are generated from a Methonator, five aerated lagoons, a polishing cell and a compressed carbon dioxide ($CO_2$) with a design flow of 0.16 MGD. Discharges from outfall #004 are domestic wastewater that is generated from septic tank, one cell lagoon and a spray irrigation system to serve Poet's employees. Discharges from outfalls #005 & #006 are stormwater runoff generated from the plant.

Application Date: 07/02/2012
Expiration Date: 01/03/2013
Last Inspection: 06/25/2014 Not In Compliance

OUTFALL(S) TABLE:

| OUTFALL | DESIGN FLOW (CFS) | TREATMENT LEVEL | EFFLUENT TYPE |
|---|---|---|---|
| 001 | ELIMINATED | ---- | ---- |
| 002 | 0.17 | INDUSTRIAL | NON-CONTACT COOLING WATER & REVERSE OSMOSIS REJECT WATER |
| 003 | 0.25 | INDUSTRIAL | PROCESS WASTEWATER |
| 004 | 0.00012 | LAND APPLICATION - NO DISCHARGE | DOMESTIC |
| 005 | 0.58 | BMPS | STORMWATER RUNOFF |
| 006 | 3.6 | BMPS | STORMWATER RUNOFF |

FACILITY PERFORMANCE HISTORY & COMMENTS:
The most recent site inspection to determine compliance with the MSOP #MO-0124575 was conducted on June 25, 2014. The facility was found to be in non-compliance during the time of the inspection. The following violations contributed to this determination:

1. Since January 2013, the POET Biorefining facility failed to comply with the effluent limits contained in Part "A" of Missouri State Operating Permit (MSOP) #MO-0124575 [Sections 644.051.1(3) and 644.076.1, RSMo].

2. On May 9, 2014, the POET Biorefining facility discharged water contaminants, process wastewater, into an unnamed tributary to Middle Fork Salt River, waters of the state, which reduced the quality of such waters below the Water Quality Standards established by the Missouri Clean Water Commission [Sections 644.051.1(2) and 644.076.1, RSMo, and 10 CSR 20-7.031 or applicable subsections of 10 CSR 20-7.031].
3. On May 9, 2014, the POET Biorefining facility caused pollution of an unnamed tributary to Middle Fork Salt River, waters of the state, or placed or caused or permitted to be placed water contaminants in a location where it is reasonably certain to cause pollution of waters of the state [Sections 644.051.1(1) and 644.076.1, RSMo].

The facility had the following violations for the last 5 years. At outfall #002, Chloride +Sulfate limits were exceeded, in March of 2009, October of 2010 and November of 2011, Oil &Grease was exceeded in February of 2009, pH was exceeded twice in 2008 &2009. At outfall #003 there was 13 $BOD_5$ violations from 2009 till 2014, 3 pH violations, 5 Ammonia violations &10 TSS violations. At oufall#005 there was 3 $BOD_5$ violations & 4 TSS violations. At outfall#006 there was 3 $BOD_5$, 4 TSS & one Oil &Grease violations.

## Part II. RECEIVING STREAM INFORMATION

RECEIVING WATER BODY'S WATER QUALITY
The Middle Fork Salt River (C) (0121) is associated with a Total Maximum Daily Load (TMDL) wasteload allocation. The pollutant is listed as sediment and the source of this pollutant is listed as agricultural nonpoint sources. This stream is the third classified stream from the discharge point, meaning the facility discharges to tributaries to Middle Fork Salt River, which flows to tributary to Middle Fork Salt River (C) (3960), which flows to Middle Fork Salt River (C) (0123), which finally flows into Middle Fork Salt River (C) (0121). The distance between the facility and the impaired segment of the Middle Fork Salt River is over 10 stream miles. The TMDL identifies the wasteload allocation of the facility based on the permitted effluent limitations during the time the TMDL was written. This is discussed in more detail in Part V – Effluent Limitations Determination below.

**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.

As per Missouri's Stormwater Regulations [10 CSR 20.6.200(6)(B)2.], the department shall establish effluent limits as necessary to protect waters of the state. Effluent limitations for stormwater are established using best professional judgment based on the category and designated uses of the receiving stream.

| | |
|---|---|
| Missouri or Mississippi River: | ☐ |
| Lake or Reservoir: | ☐ |
| Losing: | ☐ |
| Metropolitan No-Discharge: | ☐ |
| Special Stream: | ☐ |
| Subsurface Water: | ☐ |
| All Other Waters: | ☒ |

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

**RECEIVING STREAM(S) TABLE:**

| OUTFALL | WATERBODY NAME | CLASS | WBID | DESIGNATED USES | DISTANCE TO CLASSIFIED SEGMENT (MILES) | 12-DIGIT HUC |
|---|---|---|---|---|---|---|
| #002 | Tributary to Middle Fork Salt River | - | - | GEN | 0.55 | 07110006-0203 |
| #003 | Tributary to Middle Fork Salt River | - | - | GEN | 0.53 | |
| #004 | Tributary to Middle Fork Salt River | - | - | GEN | 0.59 | |
| #005 | Tributary to Middle Fork Salt River | - | - | GEN | 0.42 | |
| #006 | Tributary to Middle Fork Salt River | - | - | GEN | 0.28 | |
| All | Tributary to Middle Fork Salt River | C | 3960 | AQL, GEN, IRR, LWW, SCR, WBC-B | - | |

AQL= Protection of Warm Water Aquatic Life and Human Health-Fish Consumption; C= Streams may cease flow in dry periods; CDF= Cold Water Fishery; CLF= Cool Water Fishery; DWS= Drinking Water Supply; E= Ephemeral stream; GEN= General Criteria; GRW = Groundwater; HUC= Hydrologic Unit Code; IND= Industrial; IRR=Irrigation; LWW= Livestock & Wildlife Watering; P= Permanent; SCR= Secondary Contact Recreation; W= Wetland; WBC= Whole Body Contact Recreation; WBID= Water Body Identification Number

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

| OUTFALL | RECEIVING STREAM (C, P) | LOW-FLOW VALUES (CFS) | | |
|---|---|---|---|---|
| | | 1Q10 | 7Q10 | 30Q10 |
| All | Tributary to Middle Fork Salt River | 0.0 | 0.0 | 0.0 |

**MIXING CONSIDERATIONS**
Mixing Zone: Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].
Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(b)].

**RECEIVING STREAM MONITORING REQUIREMENTS:**
No receiving water monitoring requirements recommended at this time.

## Part III. RATIONALE AND DERIVATION OF EFFLUENT LIMITATIONS & PERMIT CONDITIONS

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

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

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

- ✓ New facility, backsliding does not apply.
- ✓ All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply.
- ✓ Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
  - ✓ Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.
  - ✓ The Department determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).

Outfall #002 & #003

This permit changes WET test requirements for the facility from a pass/fail requirement to monitoring only for toxic units. This change reflects modifications to Missouri's Effluent Regulation found at 10 CSR 20-7.015. 40 CFR 122.44(d)(1)(ii) requires the department to establish effluent limitations that control all parameters which have the reasonable potential to cause or contribute to an excursion above any state water quality standard, including state narrative criteria. The previous permit imposed a pass/fail limitation without collecting sufficient data to make a reasonable potential determination. Furthermore, the method of reporting associated with the pass/fail limitation prevented the department from gathering the data necessary to make a finding of reasonable potential. Implementation of the toxic unit monitoring requirement will allow the department to implement numeric acute criteria in accordance with water quality standards established under §303 of the CWA.

Additionally, the permit writer conducted a reasonable potential analysis for ammonia as N discharging from Outfall #003. This analysis resulted in less stringent daily maximum effluent limitations for the winter season for ammonia as N. Please see Appendix A for more information.

Outfall #005 & #006

The previous permit limits were established in error, based on either process wastewater limits or best professional judgment. These outfalls discharge stormwater only and process wastewater limits do not apply. It is the permit writer's best professional judgment to remove and replace the effluent limitations for $BOD_5$ and Oil & Grease with monitoring only and benchmark values. There will be no changes to industrial activities onsite or the composition of the stormwater discharge as a result of this renewal. The benchmark concentrations and required corrective actions are protective of the applicable water quality standards.

Additionally, the permit writer based the TSS limits on the wasteload allocations developed in the TMDL for Middle Fork Salt River. This resulted in less stringent effluent limitations for TSS but now ensures the entire permit is in compliance with the TMDL.

**ANTIDEGRADATION:**

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

✓ Renewal no degradation proposed and no further review necessary.

**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://extension.missouri.edu/main/DisplayCategory.aspx?C=74, items WQ422 through WQ449.

✓ Permittee is not authorized to land apply biosolids. Sludge/biosolids are stored in the lagoon. The permittee must submit a sludge management plan for approval that details removal and disposal plans when sludge is to be removed from lagoons.

**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.

**INDUSTRIAL SLUDGE:**

Industrial sludge is solids, semi-solids, or liquid residue generated during the treatment of industrial process wastewater in a treatment works; including but not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment process; scum and solids filtered from water supplies and backwashed; and a material derived from industrial sludge.

✓ Permittee is not authorized to land apply industrial sludge. Sludge is stored in the lagoon. The permittee must submit a sludge management plan for approval that details removal and disposal plans when sludge is to be removed from lagoons.

**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)(1)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

- ✓ Applicable; a RPA was conducted on appropriate parameters. Please see **APPENDIX A – RPA RESULTS.**

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

- ✓ Applicable; the time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)]. The facility has been given a schedule of compliance to meet final effluent limits for Outfall #003. The permittee shall meet final effluent limitations for Outfall #003 two years from the effective date of the permit. The effluent limits for ammonia as N have been reduced at this outfall. It may take longer to make the appropriate operational and management changes to reduce the ammonia as N levels in the discharge. Therefore, it is the permit writer's best professional judgment to allow additional time to meet the final effluent limitations for Outfall #003.

**SPILL REPORTING:**
Per 10 CSR 24-3.010, any emergency involving a hazardous substance must be reported to the department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply whether or not the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the Noncompliance Reporting requirement found in Standard Conditions Part I.

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP):**
In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities: (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

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

**303(d) List:**
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.

- ✓ Not applicable. This facility does not discharge to an impaired segment of a 303(d) listed stream.

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

- ✓ Applicable. The Middle Fork Salt River (P) (0121), which is the third classified stream from the discharge points, is associated with the 2006 EPA Approved TMDL for sediment.

AND

- ✓ This facility is considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment of Middle Fork Salt River (P) (0121). However, the TMDL does establish a wasteload allocation of 0.178 tons per day as a dialy maximum loading rate and 0.108 tons per day as a monthly average loading rate of sediment loading from this facility. Therefore, the permit writer has used best professional judgment to incorporate these wasteload allocations into the effluent limitations determinations in Part V – Effluent Limitations Determination below.

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

✓ Not applicable. This operating permit is not drafted under premises of a petition for variance.

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

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

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)}$$ (EPA/505/2-90-001, Section 4.5.5)

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

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).
Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).
Number of Samples "n": In accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance which should be, at a minimum, targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

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

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

**WATER QUALITY STANDARDS:**
Per [10 CSR 20-7.031(4)], general criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

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

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

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

- ☒ Facility is a designated Major.
- ☒ Facility continuously or routinely exceeds its design flow.
- ☐ Facility that exceeds its design population equivalent (PE) for $BOD_5$ whether or not its design flow is being exceeded.
- ☒ Facility (whether primarily domestic or industrial) that alters its production process throughout the year.
- ☒ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- ☒ Facility has Water Quality-Based Effluent Limitations for toxic substances (other than $NH_3$)
- ☐ Facility is a municipality with a Design Flow ≥ 22,500 gpd.
- ☐ Other – please justify.

## Part IV. 2013 WATER QUALITY CRITERIA FOR AMMONIA

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

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

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

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

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

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

**Outfall #003**
Summer – 5.8 mg/L daily maximum, 1.2 mg/L monthly average.
Winter – 10.0 mg/L daily maximum, 2.8 mg/L monthly average.

**Outfall #004**
Summer – 3.6 mg/L daily maximum, 1.4 mg/L monthly average.
Winter – 7.5 mg/L daily maximum, 2.9 mg/L monthly average.

Under the new EPA criteria, where mussels of the family Unionidae are present or expected to be present, the ESTIMATED effluent limitations for a facility in a location such as this that discharges to a receiving stream with no mixing will be:

**Outfall #003 and #004**
Summer – 1.7 mg/L daily maximum, 0.6 mg/L monthly average.
Winter – 5.6 mg/L daily maximum, 2.1 mg/L monthly average.

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

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

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

## Part V. EFFLUENT LIMITS DETERMINATION

***All Outfalls* – Total Suspended Solids Limitations In Accordance with the TMDL for Middle Fork Salt River (P) (0121).** Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

Discussion of WLA established in the TMDL for Middle Fork Salt River (P) (0121). The TMDL states that the WLA of 0.178 tons per day as a daily maximum load and 0.108 tons per day as a monthly average load were calculated based on permit limits that existed in 2006 during the time the TMDL was written. The TMDL also states that the facility design flow was used in the calculations. However, it has been noted that the permit that was in effect in 2006 only contained Total Suspended Solids limits for Outfall #001 (which no longer exists), Outfall #003 and Outfall #004. The total design flow of all five outfalls (Outfall #006 was added during the following permit renewal in 2008) was 0.917 million gallons per day (MGD). The table below shows the conversion of the TMDL WLA to concentrations of milligrams per liter based on the design flow of 0.917 MGD to help determine the relationship of this WLA to the previous permit limits. It appears that the WLA is much smaller than the previous permit limits. Thus, it is unclear how the TMDL calculated the WLA if they truly were using the previous permit limits to derive the values listed.

| WLA (tons per day) from the TMDL d/w/m* | Converted to pounds per day** | Converted to milligrams per liter*** | Actual permit limits during time TMDL written (Previous Permit Limitations) | | |
|---|---|---|---|---|---|
| | | | Outfall # | Maximum Daily Limit (MDL) | Average Monthly Limit (AML) |
| 0.178/none/0.108 | 356/none/216 | 46.55/none/28.24 | 001 | 50 mg/L | 50 mg/L |
| | | | 003 | 198 lbs/day | 61 lbs/day |
| | | | 004 | 110 mg/L | 70 mg/L |

* d = daily maximum, w = weekly average, m = monthly average
** 1 tn = 2,000 lbs
*** lbs/day = 8.34 x mg/L x flow (MGD) → mg/L = (lbs/day) / (8.34 x MGD)

If the permit limits were to be calculated based on the WLA established in the TMDL, the following values would result using the same calculations found in the table above. This will be based on a total design flow of the facility set at 2.95 MGD. This includes the additional loading from Outfall #006. The values account for distribution across all outfalls, as these are all potential sources of sediment discharge that may be contributing to the impairment addressed in the TMDL. However, the TMDL establishes a wasteload allocation for the entire site, and not to each outfall. Maintaining a wasteload allocation for the entire site provides the permittee flexibility in adjusting operations on different parts of the property to achieve the total effluent limitation for Total Suspended Solids TSS) leaving the entire site. See the discussion of TSS limits below.

| Outfall # | Design Flow (MGD) | Outfall Flow as a Percentage of Total Flow (%) | WLA (tns/day) from TMDL* | | WLA (lbs/day) | | WLA (mg/L) | |
|---|---|---|---|---|---|---|---|---|
| | | | MDL | AML | MDL | AML | MDL | AML |
| 002 | 0.11 | 0.03729 | 0.00664 | 0.00403 | 13.27458 | 8.05424 | 14.46978 | 8.77942 |
| 003 | 0.16 | 0.05424 | 0.00965 | 0.00586 | 19.30847 | 11.71525 | 14.46978 | 8.77942 |
| 004 | 0.00075 | 0.00025 | 0.00005 | 0.00003 | 0.09051 | 0.05492 | 14.46978 | 8.77942 |
| 005 | 0.376 | 0.12746 | 0.02269 | 0.01377 | 45.37492 | 27.53085 | 14.46978 | 8.77942 |
| 006 | 2.3 | 0.77966 | 0.13878 | 0.08420 | 277.55932 | 168.40678 | 14.46978 | 8.77942 |
| Total | 2.95 | 100 | 0.178 | 0.108 | 356 | 216 | N/A | N/A |

* WLA per outfall = % flow / WLA from TMDL
N/A = Not Applicable

**EFFLUENT LIMITATIONS TABLE:**

| PARAMETER | UNIT | Basis for Limits | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|---|---|---|---|---|---|---|---|
| TOTAL SUSPENDED SOLIDS | MG/L | 1, 6, 7 | 356 | | 216 | YES | VARIED FOR OUTFALLS:<br>OUTFALL #002- NONE<br>OUTFALL #003- 149/46 MG/L, 199/61 LBS/DAY<br>OUTFALL #004- 110/70 MG/L, 0.7/0.4 LBS/DAY<br>OUTFALL #005- 50/50 MG/L, 157/157 LBS/DAY<br>OUTFALL #006- 50/50 MG/L, 959/959 LBS/DAY |

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

**Basis for Limitations Codes**:

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

**ALL OUTFALLS – DERIVATION AND DISCUSSION OF LIMITS:**

**Total Suspended Solids (TSS)**

The permit writer has used best professional judgment to establish final effluent limitations for the entire facility. The final effluent limitations listed in the table above were taken from the TMDL for the Middle Fork Salt River (P) (0121). The permittee will be required to combine grab samples from each outfall into a single composite sample. This composite sample will be tested for compliance with the final effluent limitations listed above. This allows for fluctuations of TSS being discharged from each outfall without violating the final effluent limitations for the entire facility. For example, Outfall #002 may discharge very low amounts of TSS on a given day, allowing Outfall #006 to discharge a higher amount of TSS while remaining in compliance with the composite limit. This amount can then be reversed on a different day, Outfall #002 discharging higher amounts TSS while Outfall #006 has reduced amounts of TSS. This is an effort to account for variations in stormwater events and production that may occur throughout the permit, which will impact the amount of TSS being discharged through each outfall. This parameter will not be addressed in any other effluent limitations table separated per outfall below.

**MINIMUM SAMPLING AND REPORTING FREQUENCY REQUIREMENTS**

| PARAMETER | SAMPLING FREQUENCY | REPORTING FREQUENCY |
|---|---|---|
| Total Suspended Solids | once/month | once/month |

**SAMPLING FREQUENCY JUSTIFICATION**

Sampling and Reporting Frequency has been established at once per month. Due to the unconventional method for controlling this pollutant and determining compliance with final effluent limitations, the permit writer has used best professional judgment to establish a more frequent sampling and monitoring requirement. The frequency can be evaluated during the following permit renewal cycle with consideration to the effectiveness of this method.

**SAMPLING TYPE JUSTIFICATION**

Sampling Type was established as a composite of individual grab samples collected from each outfall. By combining a grab sample from each outfall, the permittee will be able to determine the amount of sediment being discharged from the entire site. If an outfall does not discharge within the monthly timeframe for sample collection, for instance no storm events occurred in that month, then there will be no grab sample from that outfall included in the composite sample for analysis. The goal of this sampling method is to capture the total TSS leaving the entire site. If an outfall did not discharge in a given month, then it can be assumed that no TSS left the property from that outfall. This will determine entire site compliance with the TMDL wasteload allocation rather than individual outfall discharge compliance.

***Outfall #002* – Process Wastewater: Reverse osmosis reject water / cooling tower blowdown / chlorination / dechlorination**

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

**EFFLUENT LIMITATIONS TABLE:**

| PARAMETER | UNIT | Basis for Limits | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|---|---|---|---|---|---|---|---|
| FLOW | GPD | 1 | * | | * | NO | */* |
| COD | MG/L | 6 | * | | * | YES | ** |
| pH | SU | 1, 6 | 6.5-9.0 | | 6.5-9.0 | NO | 6.5/9.0 |
| TEMPERATURE | °F | 1, 6 | 90 | | 90 | NO | 90/90 |
| SULFATES PLUS CHLORIDES | MG/L | 1 | 1,000 | | 1,000 | NO | 1,000/1,000 |
| CHLORIDES | MG/L | 1 | * | | * | NO | */* |
| CHLORINE, TOTAL RESIDUAL | MG/L | 1, 3 | 0.017 | | 0.008 | NO | 0.017/0.008 |
| OIL & GREASE | MG/L | 1, 3 | 15 | | 10 | NO | 15/10 |
| NITROGEN, TOTAL N | MG/L | 1, 6 | * | | * | YES | ** |
| PHOSPHORUS, TOTAL P | MG/L | 1, 6 | * | | * | YES | ** |
| WHOLE EFFLUENT TOXICITY (WET) TEST | TUa | 11 | * | | - | YES | PASS/FAIL |

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

**Basis for Limitations Codes**:

5. State or Federal Regulation/Law
6. Water Quality Standard (includes RPA)
7. Water Quality Based Effluent Limits
8. Antidegradation Review/Policy

5. Water Quality Model
6. Best Professional Judgment
7. TMDL or Permit in lieu of TMDL
8. WET Test Policy

**OUTFALL #002 – DERIVATION AND DISCUSSION OF LIMITS:**

**Flow**
In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.

**Chemical Oxygen Demand (COD)**
Monitoring is included using the permit writer's best professional judgment. There is no water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the permittee to identify materials or chemicals being discharged at levels that may reduce the available oxygen in the receiving stream and thus be toxic to aquatic life. This parameter will be reviewed during the following permit renewal to determine if this facility is causing or has the potential to cause a reduction in available oxygen in the receiving stream.

**pH**
6.5-9.0 SU. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the Water Quality Standard, which states water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.

**Temperature**
In accordance with 10 CSR 20-7.031(4)(D), the water contaminant sources shall not cause or contribute to stream temperature in excess of ninety degrees Fahrenheit (90 °F) or thirty-two and two-ninths degrees Celsius (32 2/9 °C). In order to reduce confusion and duplicative monitoring or reporting requirements, the permit will only require that temperature be monitored and reported in degrees Fahrenheit. It is not necessary to report in both Celsius and Fahrenheit. The permittee has proven that the discharge from this outfall can meet this limit. The Discharge Monitoring Report (DMR) data ranges from 10 – 88 °F.

**Sulfate plus Chloride**
In accordance with 10 CSR 20-7.031(4)(L), the concentration of sulfate plus chloride shall not exceed 1,000 mg/L in order to protection aquatic life. The permittee has proven that the discharge from this outfall can meet this limit. The DMR data ranges from 216 – 2,018 mg/L, with only three data points above 1,000 mg/L. Additionally, the permittee has indicated that this pollutant is present on the permit renewal application, with a reported value of 715 mg/L. It is noted on the application that the dechlorination system has been identified as the source of this pollutant.

**Chloride**
Monitoring only requirement. The permittee has indicated that this pollutant is present on the permit renewal application. It is noted on the application that the city water supply has been identified as the source of this pollutant. Additionally, the DMR data shows the presence of this pollutant, with a range of 32 – 1,540 mg/L. Monitoring requirements will be re-evaluated during the following permit renewal to determine if effluent limitations should be implemented.

**Chlorine, Total Residual (TRC)**
Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background TRC = 0.0 µg/L. Although the RPA shows that this outfall has no reasonable potential to exceed water quality standards, the permit writer has used best professional judgment to continue implementing effluent limitations for this parameter. This outfall discharges wastewater from a chlorination and dechlorination system. Continuing implementation of effluent limitations will ensure the dechlorination system is properly working at all times during the operation. This will also prevent backsliding in accordance with Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)].

Chronic WLA: $C_e = ((0.17 + 0.0)10 – (0.0 * 0.0))/0.17$
$C_e = 10$ µg/L

Acute WLA: $C_e = ((0.17 + 0.0)19 – (0.0 * 0.0))/0.17$
$C_e = 19$ µg/L

$LTA_c = 10\ (0.527) =$ **5.3** µg/L [CV = 0.6, 99th Percentile]
$LTA_a = 19\ (0.321) = 6.1$ µg/L [CV = 0.6, 99th Percentile]

Use most protective number of $LTA_c$ or $LTA_a$.

MDL = 5.3 (3.11) = 16.5 µg/L [CV = 0.6, 99th Percentile]
AML = 5.3 (1.55) = 8.2 µg/L [CV = 0.6, 95th Percentile, n = 4]

Total Residual Chlorine effluent limits of 0.017 mg/L daily maximum, 0.008 mg/L monthly average are recommended if chlorine is used as a disinfectant. Standard compliance language for TRC, including the minimum level (ML), should be included in the permit.

**Oil & Grease**
Conventional pollutant, in accordance with 10 CSR 20-7.031 Table A effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum. The DMR data show that these limits are achievable, with a range of 5 – 18 mg/L (only one data point above 6 mg/L).

**Nitrogen, total N**
Per 10 CSR 20-7.015(9)(D)7, nutrient monitoring shall be instituted on a quarterly basis for facilities with a design flow greater than 0.1 MGD.

**Phosphorous, total P**
Per 10 CSR 20-7.015(9)(D)7, nutrient monitoring shall be instituted on a quarterly basis for facilities with a design flow greater than 0.1 MGD.

**WET Test, Acute**
Monitoring requirement only; monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards.

**MINIMUM SAMPLING AND REPORTING FREQUENCY REQUIREMENTS**

| PARAMETER | SAMPLING FREQUENCY | REPORTING FREQUENCY |
|---|---|---|
| Flow | once/month | once/month |
| COD | once/month | once/month |
| pH | once/month | once/month |
| Temperature | once/month | once/month |
| Sulfate plus Chloride | once/month | once/month |
| Chloride | once/month | once/month |
| Chlorine, Total Residual | once/month | once/month |
| Oil & Grease | once/month | once/month |
| Nitrogen, Total N | once/quarter | once/quarter |
| Phosphorus, Total P | once/quarter | once/quarter |
| WET Test, Acute | once/year | once/year |

**SAMPLING FREQUENCY JUSTIFICATION**

Sampling and Reporting Frequency was retained from previous permit for those parameters that were continued from that previous permit. Sampling and Reporting Frequency for TSS and COD was established at the same frequency as the existing parameters. Sampling and Reporting Frequency for Total Nitrogen as N and Total Phosphorus as P was set at the minimum regulatory frequency of once per quarter, per 10 CSR 20-7.015(9)(D)7.

**WET Test Sampling Frequency Justification**. WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring.* It is recommended that WET testing be conducted during the period of lowest stream flow.

**Acute Whole Effluent Toxicity**

☒ - NO LESS THAN **ONCE/YEAR:**

- ☒ -Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.
- ☒ -Facility continuously or routinely exceeds their design flow.
- ☐ -Facility exceeds its design population equivalent (PE) for $BOD_5$ whether or not its design flow is being exceeded.
- ☒ -Facility has Water Quality-based effluent limitations for toxic substances (other than $NH_3$).

**SAMPLING TYPE JUSTIFICATION**

Sampling Type retained from previous permit for those parameters that were continued from that previous permit. Sampling Types for TSS, COD, Total Nitrogen as N, and Total Phosphorus as P were established with the same type as the existing parameters.

***Outfall #003* – Process Wastewater: Methonator / Five aerated lagoons / polishing lagoon / compressed CO2 for pH adjustments / sludge retained in lagoons**

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

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**EFFLUENT LIMITATIONS TABLE:**

| PARAMETER | UNIT | Basis for Limits | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|---|---|---|---|---|---|---|---|
| FLOW | GPD | 1 | * | | * | NO | */* |
| $BOD_5$ | MG/L | 1 | 80 | | 30 | NO | 80/30 |
| TSS | LBS/DAY | 1, 6, 7 | *** | | *** | YES | 149/46 MG/L |
| pH | SU | 1 | 6.5-9.0 | | 6.5-9.0 | NO | 6.5-9.0 |
| AMMONIA AS N (APRIL 1 – SEPT 30) | MG/L | 1, 2, 3, 5 | 5.8 | | 1.2 | YES | 6.3/2.4 |
| AMMONIA AS N (OCT 1 – MARCH 31) | MG/L | 1, 2, 3, 5 | 10.0 | | 2.8 | YES | 8.4/3.2 |
| OIL & GREASE | MG/L | 1 | 15 | | 10 | NO | 15/10 |
| NITROGEN, TOTAL N | MG/L | 1, 6 | * | | * | YES | ** |
| PHOSPHORUS, TOTAL P | MG/L | 1, 6 | * | | * | YES | ** |
| WHOLE EFFLUENT TOXICITY (WET) TEST | TUa | 11 | * | | - | YES | PASS/FAIL |

* - Monitoring requirement only
** - Parameter not previously established in previous state operating permit.
***- Parameter removed.

**Basis for Limitations Codes**:

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

**OUTFALL #003 – DERIVATION AND DISCUSSION OF LIMITS:**

**Flow**

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.

**Biochemical Oxygen Demand ($BOD_5$)**

Per Federal Effluent Limitation Guidelines 40 CFR Part 414.61, a MDL of 80 mg/L and an AML of 30 mg/L will be implemented in this permit. The regulation cited above list ethanol as one of the organic chemical commodities associated with the industrial activity of this facility (SIC #2869). Additionally, the permit application and DMR data show the presence of this parameter in the discharge. See the results below. These values prove that the facility is capable of meeting these technology-based effluent limitations; however, will need to adjust operations to consistently meet the established limits.

Application data: 33 mg/L maximum, 9 mg/L average (12 samples)
DMR data: 2 – 464 mg/L (with 9 data points above 80 mg/L)

**Total Suspended Solids (TSS)**

The parameter has been removed from the table and is now being address in a different effluent table above. Please see the "All Outfalls" effluent limitations for TSS above. This is an effort to address the wasteload allocation issued in the TMDL for Middle Fork Salt River.

**pH**

6.5-9.0 SU. Both the Federal Effluent Limitation Guidelines of 6.0-9.0 SU [40 CFR Part 414.61] and the technology-based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the Water Quality Standard, which states water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.

**Ammonia, Total as Nitrogen**
Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU Background total ammonia nitrogen = 0.01 mg/L. No mixing considerations allowed; therefore, WLA = appropriate criterion. The permit application indicates the presence of ammonia in the discharge. No data was submitted with the application for this outfall. The DMR data was used in the RPA and the calculations below. See appendix A for the RPA results.

| Season | Temp ($^oC$) | pH (SU) | Total Ammonia Nitrogen CCC (mg/L) | Total Ammonia Nitrogen CMC (mg/L) |
|---|---|---|---|---|
| Summer | 26 | 7.8 | 1.5 | 12.1 |
| Winter | 6 | 7.8 | 3.1 | 12.1 |

Summer: April 1 – September 30
Chronic WLA: $C_e = ((0.25 + 0.0)1.5 – (0.0 * 0.01))/0.25$
$C_e = 1.5$ mg/L

Acute WLA: $C_e = ((0.25 + 0.0)12.1 – (0.0 * 0.01))/0.25$
$C_e = 12.1$ mg/L

$LTA_c$ = 1.5 mg/L (0.547) = 0.82 mg/L [CV = 1.54, 99th Percentile, 30 day avg.]
$LTA_a$ = 12.1 mg/L (0.142) = 1.72 mg/L [CV = 1.54, 99th Percentile]

Use most protective number of $LTA_c$ or $LTA_a$.

MDL = 0.82 mg/L (7.06) = 5.8 mg/L [CV = 1.54, 99th Percentile]
AML = 0.82 mg/L (1.51) = 1.2 mg/L [CV = 1.54, 95th Percentile, n = 30]

Winter: October 1 – March 31
Chronic WLA: $C_e = ((0.25 + 0.0)3.1 – (0.0 * 0.01))/0.25$
$C_e = 3.1$ mg/L

Acute WLA: $C_e = ((0.25 + 0.0)12.1 – (0.0 * 0.01))/0.25$
$C_e = 12.1$ mg/L

$LTA_c$ = 3.1 mg/L (0.676) = 2.10 mg/L [CV = 096, 99th Percentile, 30 day avg.]
$LTA_a$ = 12.1 mg/L (0.211) = 2.55 mg/L [CV = 0.96, 99th Percentile]

Use most protective number of $LTA_c$ or $LTA_a$.

MDL = 2.10 mg/L (4.75) = 10.0 mg/L [CV = 0.96, 99th Percentile]
AML = 2.10 mg/L (1.31) = 2.8 mg/L [CV = 0.96, 95th Percentile, n =30]

**Oil & Grease**. Conventional pollutant, in accordance with 10 CSR 20-7.031 Table A effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum. The permit application indicates the presence of this parameter in the discharge, reporting a maximum of < 6 mg/L and an average of < 5 mg/L (12 samples). The DMR data prove that these limits are achievable, with a reported range of 5 – 9 mg/L.

**Nitrogen, total N**
Per 10 CSR 20-7.015(9)(D)7, nutrient monitoring shall be instituted on a quarterly basis for facilities with a design flow greater than 0.1 MGD.

**Phosphorous, total P**
Per 10 CSR 20-7.015(9)(D)7, nutrient monitoring shall be instituted on a quarterly basis for facilities with a design flow greater than 0.1 MGD.

**WET Test, Acute**
Monitoring requirement only; monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards.

**MINIMUM SAMPLING AND REPORTING FREQUENCY REQUIREMENTS**

| PARAMETER | SAMPLING FREQUENCY | REPORTING FREQUENCY |
|---|---|---|
| Flow | once/month | once/month |
| $BOD_5$ | once/month | once/month |
| pH | once/month | once/month |
| Ammonia as N | once/month | once/month |
| Oil & Grease | once/month | once/month |
| Nitrogen, Total N | once/quarter | once/quarter |
| Phosphorus, Total P | once/quarter | once/quarter |
| WET Test, Acute | once/year | once/year |

**SAMPLING FREQUENCY JUSTIFICATION**

Sampling and Reporting Frequency was retained from previous permit for those parameters that were continued from that previous permit. Sampling and Reporting Frequency for Total Nitrogen as N and Total Phosphorus as P was set at the minimum regulatory frequency of once per quarter, per 10 CSR 20-7.015(9)(D)7.

**WET Test Sampling Frequency Justification**. WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring.* It is recommended that WET testing be conducted during the period of lowest stream flow.

**Acute Whole Effluent Toxicity**

☒ - NO LESS THAN **ONCE/YEAR:**

- ☒ -Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.
- ☒ -Facility continuously or routinely exceeds their design flow.
- ☐ -Facility exceeds its design population equivalent (PE) for $BOD_5$ whether or not its design flow is being exceeded.
- ☒ -Facility has Water Quality-based effluent limitations for toxic substances (other than $NH_3$).

**SAMPLING TYPE JUSTIFICATION**

Sampling Type retained from previous permit for those parameters that were continued from that previous permit. Sampling Types for Total Nitrogen as N and Total Phosphorus as P were established with the same type as the existing parameters.

***Outfall #004* – Domestic Wastewater: Septic tank / single cell lagoon / sludge retained in lagoon / spray irrigation / stormwater runoff**

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

**LAND APPLICATION SYSTEM MONITORING**

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

**LAND APPLICATION SYSTEM MONITORING TABLE:**

| PARAMETER | UNIT | BASIS FOR LIMITS | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|---|---|---|---|---|---|---|---|
| **STORAGE BASIN MONITORING** | | | | | | | |
| FREEBOARD | FEET | 1 | * | | | N/A | ** |
| **WASTEWATER LAND APPLICATION MONITORING** | | | | | | | |
| IRRIGATION PERIOD | HOURS | 6 | * | | - | YES | *** |
| VOLUME IRRIGATED | GALLONS | 6 | * | | - | YES | *** |
| APPLICATION AREA | ACRES | 6 | * | | - | YES | *** |
| APPLICATION RATE | INCHES/ ACRE | 6 | * | | - | YES | *** |
| **SOIL MONITORING** | | | | | | | |
| PH | SU | 1 | * | | | N/A | ** |
| TOTAL KJELDAHL NITROGEN | MG/L | 1 | * | | | N/A | ** |
| NITRATE NITROGEN AS N | MG/L | 1 | * | | | N/A | ** |
| AVAILABLE PHOSPHORUS AS P (BRAY P-1 METHOD) | MG/L | 1 | * | | | N/A | ** |
| TOTAL SODIUM | MG/KG | 1 | * | | | N/A | ** |
| EXCHANGEABLE SODIUM | PERCENT | 1 | * | | | N/A | ** |

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

**Basis for Limitations Codes**:
1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Antidegradation Review/Policy
5. Water Quality Model
6. Best Professional Judgment
7. TMDL or Permit in lieu of TMDL
8. WET Test Policy

**OUTFALL #004 – DERIVATION AND DISCUSSION OF REQUIREMENTS:**

**STORAGE BASIN**

**Freeboard**

Monitoring requirement only. The permit writer has used best professional judgment to include monitoring for this parameter. This will ensure land application occurs frequently enough to prevent the discharge of wastewater from the storage basin.

## WASTEWATER LAND APPLICATION MONITORING

**Irrigation Period**
Monitoring requirement only. The permit writer has used best professional judgment to include monitoring for this parameter. Monitoring for the Irrigation Period is included to determine if proper application is occurring on the land application fields.

**Volume Irrigated**
Monitoring requirement only. The permit writer has used best professional judgment to include monitoring for this parameter. Monitoring for the Volume Irrigated is included to determine if proper application is occurring on the land application fields.

**Application Area**
Monitoring requirement only. The permit writer has used best professional judgment to include monitoring for this parameter. Monitoring for the Application Area is included to determine if proper application is occurring on the land application fields.

**Application Rate**
Monitoring requirement only. The permit writer has used best professional judgment to include monitoring for this parameter. Monitoring for the Application Rate is included to determine if proper application is occurring on the land application fields.

## SOIL MONITORING

**pH**
Monitoring requirement only. Monitoring for pH is included to determine nutrient loading rates on the land application fields. [10 CSR 20-8.020(15)(F)7.]

**Total Kjeldahl Nitrogen**
Monitoring requirement only. Monitoring for Total Kjeldahl Nitrogen as N is included to determine nutrient loading rates on the land application fields. [10 CSR 20-8.020(15)(F)7.]

**Nitrate Nitrogen as N**
Monitoring requirement only. Monitoring for Nitrate Nitrogen as N is included to determine nutrient loading rates on the land application fields. [10 CSR 20-8.020(15)(F)7.]

**Available Phosphorus as P**
Monitoring requirement only. Monitoring for Available Phosphorus as P is included to determine nutrient loading rates on the land application fields. [10 CSR 20-8.020(15)(F)7.]

**Total Sodium**
Monitoring requirement only. Monitoring for Total Sodium is included to determine nutrient loading rates on the land application fields. [10 CSR 20-8.020(15)(F)8.]

**Exchangeable Sodium**
Monitoring requirement only. Monitoring for Exchangeable Sodium is included to determine nutrient loading rates on the land application fields. [10 CSR 20-8.020(15)(F)8.]

## MINIMUM SAMPLING AND REPORTING FREQUENCY REQUIREMENTS

| PARAMETER | SAMPLING FREQUENCY | REPORTING FREQUENCY |
|---|---|---|
| **STORAGE BASIN MONITORING** | | |
| Freeboard | once/month | once/month |
| Precipitation | once/day | once/month |
| **WASTEWATER LAND APPLICATION MONITORING** | | |
| Irrigation Period | once/day during application | once/quarter |
| Volume Irrigated | once/day during application | once/quarter |
| Application Area | once/day during application | once/quarter |
| Application Rate | once/day during application | once/quarter |
| **SOIL MONITORING** | | |
| pH | once/year | once/year |
| Total Kjeldahl Nitrogen | once/year | once/year |
| Nitrate Nitrogen as N | once/year | once/year |
| Available Phosphorus as P (Bray P-1 Method) | once/year | once/year |
| Total Sodium | once/year | once/year |
| Exchangeable Sodium | once/year | once/year |

## SAMPLING FREQUENCY JUSTIFICATION

### STORAGE BASIN MONITORING

Sampling and Reporting Frequency for freeboard is established at once per month to coincide with other outfall monitoring frequencies. Sampling Frequency for precipitation is established at once per day to ensure overflow and discharge of the storage basin does not occur. The permittee will be required to report the daily precipitation values at the same frequency as other parameters, once per month.

### WASTEWATER LAND APPLICATION MONITORING

Sampling Frequency of wastewater land application monitoring will be stablished at once per day during application. This will ensure that application rates will not cause runoff or illicit discharge of the wastewater. Additionally, this will assist in ensuring proper irrigation is occurring on site. The permittee will only be required to report these values on a quarterly basis.

### SOIL MONITORING

Sampling and Reporting Frequency for soil monitoring will be established at once per year. These requirements are set to determine the impact of the loading on the soils and to ensure the soils can maintain treatment capacity and uptake of nutrients and pollutants. Yearly monitoring is adequate to assess soil quality.

## SAMPLING TYPE JUSTIFICATION

### STORAGE BASIN MONITORING

Sampling Type for storage basin monitoring parameters will be total measured values. These parameters require observational measurements. Total measured values will appropriately capture the data.

### WASTEWATER LAND APPLICATION MONITORING

Sampling Type for wastewater land application monitoring parameters will be total measured values. These parameters require observational measurements. Total measured values will appropriately capture the data.

### SOIL MONITORING

Sampling Type for soil monitoring parameters will be composite samples. The permittee will be required to collect the same number of grab sample as there are acres available for land application and then combine those individual samples into a composite sample. The permittee can review the soil sampling guidance document developed by the University of Missouri Extension for additional sampling guidance, which can be found at the following website: http://extension.missouri.edu/p/G9217.

**EMERGENCY DISCHARGE MONITORING**

There are no effluent limits associated with Outfall #004 for the no-discharge facility. However, the following is required for an emergency discharge.

**EMERGENCY DISCHARGE MONITORING TABLE:**

| PARAMETER | UNIT | Basis for Limits | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|---|---|---|---|---|---|---|---|
| **EMERGENCY DISCHARGE EFFLUENT LIMITATIONS** | | | | | | | |
| FLOW | GPD | 1, 6 | * | | * | NO | */* |
| $BOD_5$ | MG/L | 1, 6 | | 65 | 45 | NO | 65/45 |
| TSS | LBS/DAY | 1, 6, 7 | | **** | **** | YES | 110/70 MG/L |
| pH | SU | 1, 6 | ≥ 6.5 | | ≥ 6.5 | YES | ≥ 6.0 |
| AMMONIA AS N (APRIL 1 – SEPT 30) | MG/L | 1, 2, 3, 6 | 3.6 | | 1.4 | YES | *** |
| AMMONIA AS N (OCT 1 – MARCH 31) | MG/L | 1, 2, 3, 6 | 7.5 | | 2.9 | YES | *** |
| ESCHERICHIA COLI | ** | 1, 3, 6 | | 1,030 | 206 | YES | *** |
| OIL & GREASE | MG/L | 1, 6 | 15 | | 10 | YES | *** |

* - Monitoring requirement only
** - # of colonies/100mL; the Monthly Average for *E. coli* is a geometric mean.
*** - Parameter not previously established in previous state operating permit.
****-Parameter removed.

**Basis for Limitations Codes**:
1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Antidegradation Review/Policy
5. Water Quality Model
6. Best Professional Judgment
7. TMDL or Permit in lieu of TMDL
8. WET Test Policy

**EMERGENCY DISCHARGE**

**Flow**
In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.

**Biochemical Oxygen Demand ($BOD_5$)**
In accordance with [10 CSR 20-7.015(8)(A)3.A.], a weekly average of 65 mg/L and a monthly average of 45 mg/L will be implemented in this permit. The effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's water quality.

**Total Suspended Solids (TSS)**
The parameter has been removed from the table and is now being address in a different effluent table above. Please see the "All Outfalls" effluent limitations for TSS above. This is an effort to address the wasteload allocation issued in the TMDL for Middle Fork Salt River.

**pH**
≥ 6.5 SU. Technology-based effluent limitations for lagoons of > 6.0 SU [10 CSR 20-7.015(8)(A)3.A.] are not protective of the Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. With no mixing zone, the water quality standard, ≥ 6.5 SU, must be met at the outfall.

**Ammonia, Total as Nitrogen**
Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU Background total ammonia nitrogen = 0.01 mg/L. No mixing considerations allowed; therefore, WLA = appropriate criterion.

| Season | Temp ($^oC$) | pH (SU) | Total Ammonia Nitrogen CCC (mg/L) | Total Ammonia Nitrogen CMC (mg/L) |
|---|---|---|---|---|
| Summer | 26 | 7.8 | 1.5 | 12.1 |
| Winter | 6 | 7.8 | 3.1 | 12.1 |

Summer: April 1 – September 30
Chronic WLA: $C_e = ((0.00012 + 0.0)1.5 – (0.0 * 0.01))/0.00012$
$C_e = 1.5$ mg/L

Acute WLA: $C_e = ((0.00012 + 0.0)12.1 – (0.0 * 0.01))/ 0.00012$
$C_e = 12.1$ mg/L

$LTA_c$ = 1.5 mg/L (0.780) = 1.17 mg/L [CV = 0.6, 99th Percentile, 30 day avg.]
$LTA_a$ = 12.1 mg/L (0.321) = 3.89 mg/L [CV = 0.6, 99th Percentile]

Use most protective number of $LTA_c$ or $LTA_a$.

MDL = 1.17 mg/L (3.11) = 3.6 mg/L [CV = 0.6, 99th Percentile]
AML = 1.17 mg/L (1.19) = 1.4 mg/L [CV = 0.6, 95th Percentile, n =30]

Winter: October 1 – March 31
Chronic WLA: $C_e = ((0.00012 + 0.0)3.1 – (0.0 * 0.01))/ 0.00012$
$C_e = 3.1$ mg/L

Acute WLA: $C_e = ((0.00012 + 0.0)12.1 – (0.0 * 0.01))/ 0.00012$
$C_e = 12.1$ mg/L

$LTA_c$ = 3.1 mg/L (0.780) = 2.42 mg/L [CV = 0.6, 99th Percentile, 30 day avg.]
$LTA_a$ = 12.1 mg/L (0.321) = 3.89 mg/L [CV = 0.6, 99th Percentile]

Use most protective number of $LTA_c$ or $LTA_a$.

MDL = 2.42 mg/L (3.11) = 7.5 mg/L [CV = 0.6, 99th Percentile]
AML = 2.42 mg/L (1.19) = 2.9 mg/L [CV = 0.6, 95th Percentile, n =30]

***Escherichia coli (E. coli)***
Monthly average of 206 per 100 ml as a geometric mean and weekly average of 1,030 as a geometric mean during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.031(4)(C). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d).

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

## MINIMUM SAMPLING AND REPORTING FREQUENCY REQUIREMENTS

| PARAMETER | SAMPLING FREQUENCY | REPORTING FREQUENCY |
|---|---|---|
| **EMERGENCY DISCHARGE EFFLUENT LIMITATIONS** | | |
| Flow | once/day during discharge | once/month |
| $BOD_5$ | once/day during discharge | once/month |
| pH | once/day during discharge | once/month |
| Ammonia as N | once/day during discharge | once/month |
| *E. coli* | once/day during discharge | once/month |
| Oil & Grease | once/day during discharge | once/month |

**SAMPLING FREQUENCY JUSTIFICATION**

**EMERGENCY DISCHARGE**

Sampling and Reporting Frequency for emergency discharges has been established at once per day during the discharge. This is sufficient to characterize the effluent and how this will impact the receiving stream. As this is a no-discharge system, sampling shall occur every day during the illicit discharge. The permittee should report the results on a monthly basis to coincide with other reporting requirements.

**SAMPLING TYPE JUSTIFICATION**

**EMERGENCY DISCHARGE**

As per 10 CSR 20-7.015, $BOD_5$ and TSS collected for lagoons may be grab samples. Grab samples must be collected for pH, Ammonia as N, *E. coli*, and Oil & Grease. This is due to the holding time restriction for *E. coli*, the volatility of Ammonia, and the fact that pH cannot be preserved and must be sampled in the field. As Ammonia and Oil & Grease samples must be immediately preserved with acid, these samples are to be collected as a grab. For further information on sampling and testing methods please review 10 CSR 20-7.015(9)(D) 2.

***Outfall #005* – Stormwater collection basins / sludge retained in basin /stormwater runoff**

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

Due to the nature of the discharges from these outfalls being stormwater, only a maximum daily limit (MDL) or monitoring requirement will be implemented for many of the parameters listed below. Stormwater events are acute occurrences that result in the greatest concentrations of pollutants being discharged in the first part of the runoff. This first flush can best be represented by a grab sample within the first hours of runoff. Additionally, stormwater events are highly variable. Recording an average monthly limit (AML) is not representative of the nature of these discharges. Many of these parameters that require just a MDL monitoring only requirement will now have a benchmark value associated with that monitoring only requirement. These benchmark values will be listed under the individual discussion and derivation of each parameter containing such a value.

BENCHMARKS

Benchmark concentrations are **not** effluent limitations; benchmark exceedance, therefore, is not a permit violation. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the permittee in knowing when additional corrective action(s) may be necessary to comply with the technology based effluent limitations (TBEL). Failure to take corrective action is a violation of the permit. Benchmark exceedance alone is not a permit violation.

The benchmarks listed in the derivation discussion below have been determined to be feasible, affordable and protective of water quality. These benchmark values are consistent with other stormwater permits including the Environmental Protection Agency's (EPA's) *Multi-Sector General Permit For Stormwater Discharges Associated With Industrial Activity* (MSGP), Subsector C2 (SIC #2813). The facility will be required to monitor for all these parameters and if the benchmarks are exceeded at all in the following permit cycle, then the permit writer will use best professional judgment to determine if effluent limitations will be necessary to protect water quality.

**EFFLUENT LIMITATIONS TABLE:**

| PARAMETER | UNIT | Basis for Limits | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|---|---|---|---|---|---|---|---|
| FLOW | GPD | 1 | * | | - | YES | */* |
| PRECIPITATION | INCHES | 6 | * | | - | YES | *** |
| $BOD_5$ | MG/L | 1, 6 | ** | | - | YES | 80/30 |
| TSS | LBS/DAY | 1, 6, 7 | **** | | **** | YES | 50/50 MG/L |
| pH | SU | 1, 6 | 6.5-9.0 | | - | YES | 6.5-9.0 |
| OIL & GREASE (MG/L) | MG/L | 1, 6 | ** | | - | YES | 15/10 |
| NITROGEN, TOTAL N | MG/L | 1, 6 | * | | - | YES | *** |
| PHOSPHORUS, TOTAL P | MG/L | 1, 6 | * | | - | YES | *** |
| NITRATE PLUS NITRITE NITROGEN | MG/L | 6 | ** | | - | YES | *** |
| ALUMINUM, TOTAL RECOVERABLE | MG/L | 6 | ** | | - | YES | *** |
| IRON, TOTAL RECOVERABLE | MG/L | 6 | ** | | - | YES | *** |

* - Monitoring requirement only
** - Monitoring with associated benchmark
*** - Parameter not previously established in previous state operating permit.
****- Parameter removed.

**Basis for Limitations Codes**:

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

**OUTFALL #005 – DERIVATION AND DISCUSSION OF LIMITS:**

**Flow**
In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.

**Precipitation**
Monitoring only requirement; measuring the amount of precipitation [(10 CSR 20-6.200(2)(C)1.E(VI)] during an event is necessary to ensure adequate stormwater management exists at the site. Knowing the amount of potential stormwater runoff can provide the permittee a better understanding of specific control measure that should be employed to ensure protection of water quality.

**Biochemical Oxygen Demand ($BOD_5$)**
Monitoring only requirement with a benchmark value of 80 mg/L. The permit writer has used best professional judgment to remove the effluent limitations and implement monitoring only for this parameter. The previous permit (2008) states that the effluent limitations of 80 mg/L and 30 mg/L were retained from the previous permit. However, after reviewing the files, the previous permit (2003) referred to does not contain effluent limitations for this parameter from this outfall. It is assumed that the Federal Effluent Limitation Guidelines 40 CFR Part 414.61, a MDL of 80 mg/L and an AML of 30 mg/L were used to implement these limits in the previous permit. However, these guidelines only apply to process wastewater. Therefore, the effluent limitations have been removed. Additionally, a benchmark value will be set at 80 mg/L. Due to the nature of the industrial activity, the daily maximum limit from the Federal Effluent Limitation Guidelines 40 CFR Part 414.61 has been deemed an appropriate and achievable benchmark value. The permit application data and the DMR data confirm that the facility can achieve this value in stormwater runoff. See the data results below.

Application data: 20 mg/L maximum, 15.25 mg/L average (4 samples)
DMR data: 7 – 48 mg/L

**Total Suspended Solids (TSS)**
The parameter has been removed from the table and is now being address in a different effluent table above. Please see the "All Outfalls" effluent limitations for TSS above. This is an effort to address the wasteload allocation issued in the TMDL for Middle Fork Salt River.

**pH**
6.5-9.0 SU. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the Water Quality Standard, which states water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.

**Oil & Grease**
Monitoring only requirement with a benchmark value of 10 mg/L. The permit writer has used best professional judgment to remove the effluent limitations and implement monitoring only for this parameter. Additionally, a benchmark value will be set at the chronic criteria for the protection of aquatic life [10 CSR 20-7.031 Table A], 10 mg/L. The permit application data and the DMR data confirm that the facility can achieve this value in stormwater runoff. See the data results below.
Application data: 8 mg/L maximum, 5.75 mg/L average (4 samples)
DMR data: 5 – 6 mg/L

**Nitrogen, total N**
Per 10 CSR 20-7.015(9)(D)7, nutrient monitoring shall be instituted on a quarterly basis for facilities with a design flow greater than 0.1 MGD.

**Phosphorous, total P**
Per 10 CSR 20-7.015(9)(D)7, nutrient monitoring shall be instituted on a quarterly basis for facilities with a design flow greater than 0.1 MGD.

**Nitrate plus Nitrite Nitrogen**
Monitoring only requirement with a benchmark value of 0.68 mg/L. In accordance with the EPA's MSGP, the permit writer has used best professional judgment implement monitoring only for this parameter with a benchmark value of 0.68 mg/L. This parameter will be re-evaluated during the following permit renewal to determine the potential to exceed this benchmark value or cause negative impacts to aquatic life and habitat.

**Aluminum, Total Recoverable**
Monitoring only requirement with a benchmark value of 0.75 mg/L. In accordance with the EPA's MSGP, the permit writer has used best professional judgment implement monitoring only for this parameter with a benchmark value of 0.75 mg/L. This is equivalent to the acute criteria for protection of aquatic life [10 CSR 20-7.031 Table A], 750 µg/L. This parameter will be re-evaluated during the following permit renewal to determine the potential to exceed this benchmark value or cause negative impacts to aquatic life and habitat.

**Iron, Total Recoverable**
Monitoring only requirement with a benchmark value of 1.0 mg/L. In accordance with the EPA's MSGP, the permit writer has used best professional judgment implement monitoring only for this parameter with a benchmark value of 0.75 mg/L. This is equivalent to the chronic criteria for protection of aquatic life [10 CSR 20-7.031 Table A], 1,000 µg/L. This parameter will be re-evaluated during the following permit renewal to determine the potential to exceed this benchmark value or cause negative impacts to aquatic life and habitat.

**MINIMUM SAMPLING AND REPORTING FREQUENCY REQUIREMENTS**

| PARAMETER | SAMPLING FREQUENCY | REPORTING FREQUENCY |
|---|---|---|
| Flow | once/quarter | once/quarter |
| Precipitation | once/day | once/quarter |
| $BOD_5$ | once/quarter | once/quarter |
| pH | once/quarter | once/quarter |
| Oil & Grease | once/quarter | once/quarter |
| Nitrogen, Total N | once/quarter | once/quarter |
| Phosphorus, Total P | once/quarter | once/quarter |
| Nitrate plus Nitrite | once/quarter | once/quarter |
| Aluminum, Total Recoverable | once/quarter | once/quarter |
| Iron, Total Recoverable | once/quarter | once/quarter |

**SAMPLING FREQUENCY JUSTIFICATION**
Sampling and Reporting Frequency was retained from previous permit for those parameters that were continued from that previous permit. Sampling and Reporting Frequency for all new parameters have been set at the same frequency as those existing parameters, except precipitation. Precipitation must be measured daily to ensure the stormwater management and BMPs are functioning properly.

**SAMPLING TYPE JUSTIFICATION**
Sampling Type retained from previous permit for those parameters that were continued from that previous permit. Sampling Types for all new parameters have been established with the same type as the existing parameters, except precipitation. Precipitation shall be collected and recorded as a total measured value.

***Outfall #006* – Stormwater runoff / sheet flow and sump pump discharge to basin / sludge retained in basin**
Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

Due to the nature of the discharges from these outfalls being stormwater, only a maximum daily limit (MDL) or monitoring requirement will be implemented for many of the parameters listed below. Stormwater events are acute occurrences that result in the greatest concentrations of pollutants being discharged in the first part of the runoff. This first flush can best be represented by a grab sample within the first hours of runoff. Additionally, stormwater events are highly variable. Recording an average monthly limit (AML) is not representative of the nature of these discharges. Many of these parameters that require just a MDL monitoring only requirement will now have a benchmark value associated with that monitoring only requirement. These benchmark values will be listed under the individual discussion and derivation of each parameter containing such a value.

BENCHMARKS
Benchmark concentrations are **not** effluent limitations; benchmark exceedance, therefore, is not a permit violation. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the permittee in knowing when additional corrective action(s) may be necessary to comply with the technology based effluent limitations (TBEL). Failure to take corrective action is a violation of the permit. Benchmark exceedance alone is not a permit violation.

The benchmarks listed in the derivation discussion below have been determined to be feasible, affordable and protective of water quality. These benchmark values are consistent with other stormwater permits including the Environmental Protection Agency's (EPA's) *Multi-Sector General Permit For Stormwater Discharges Associated With Industrial Activity* (MSGP), Subsector C2 (SIC #2813). The facility will be required to monitor for all these parameters and if the benchmarks are exceeded at all in the following permit cycle, then the permit writer will use best professional judgment to determine if effluent limitations will be necessary to protect water quality.

**EFFLUENT LIMITATIONS TABLE:**

| PARAMETER | UNIT | Basis for Limits | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|---|---|---|---|---|---|---|---|
| FLOW | GPD | 1 | * | | - | YES | */* |
| PRECIPITATION | INCHES | 6 | * | | - | YES | *** |
| $BOD_5$ | MG/L | 1, 6 | ** | | - | YES | 80/30 |
| TSS | LBS/DAY | 1, 6, 7 | **** | | **** | YES | 50/50 MG/L |
| pH | SU | 1, 6 | 6.5-9.0 | | - | YES | 6.5-9.0 |
| OIL & GREASE (MG/L) | MG/L | 1, 6 | ** | | - | YES | 15/10 |
| NITROGEN, TOTAL N | MG/L | 1, 6 | * | | - | YES | *** |
| PHOSPHORUS, TOTAL P | MG/L | 1, 6 | * | | - | YES | *** |
| NITRATE PLUS NITRITE NITROGEN | MG/L | 6 | ** | | - | YES | *** |
| ALUMINUM, TOTAL RECOVERABLE | MG/L | 6 | ** | | - | YES | *** |
| IRON, TOTAL RECOVERABLE | MG/L | 6 | ** | | - | YES | *** |

* - Monitoring requirement only
** - Monitoring with associated benchmark
*** - Parameter not previously established in previous state operating permit.
****-Parameter removed.

**Basis for Limitations Codes**:
1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Antidegradation Review/Policy
5. Water Quality Model
6. Best Professional Judgment
7. TMDL or Permit in lieu of TMDL
8. WET Test Policy

**OUTFALL #005 – DERIVATION AND DISCUSSION OF LIMITS:**

**Flow**
In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.

**Precipitation**
Monitoring only requirement; measuring the amount of precipitation [(10 CSR 20-6.200(2)(C)1.E(VI)] during an event is necessary to ensure adequate stormwater management exists at the site. Knowing the amount of potential stormwater runoff can provide the permittee a better understanding of specific control measure that should be employed to ensure protection of water quality.

**Biochemical Oxygen Demand ($BOD_5$)**
Monitoring only requirement with a benchmark value of 80 mg/L. The permit writer has used best professional judgment to remove the effluent limitations and implement monitoring only for this parameter. The previous permit (2008) states that the effluent limitations of 80 mg/L and 30 mg/L were retained from the previous permit. However, after reviewing the files, the previous permit (2003) referred to does not contain effluent limitations for this parameter from this outfall. It is assumed that the Federal Effluent Limitation Guidelines 40 CFR Part 414.61, a MDL of 80 mg/L and an AML of 30 mg/L were used to implement these limits in the previous permit. However, these guidelines only apply to process wastewater. Therefore, the effluent limitations have been removed. Additionally, a benchmark value will be set at 80 mg/L. Due to the nature of the industrial activity, the daily maximum limit from the Federal Effluent Limitation Guidelines 40 CFR Part 414.61 has been deemed an appropriate and achievable benchmark value. The permit application data and the DMR data confirm that the facility can achieve this value in stormwater runoff. See the data results below.

Application data: 20 mg/L maximum, 15 mg/L average (4 samples)
DMR data: 2 – 36 mg/L

**Total Suspended Solids (TSS)**
The parameter has been removed from the table and is now being address in a different effluent table above. Please see the "All Outfalls" effluent limitations for TSS above. This is an effort to address the wasteload allocation issued in the TMDL for Middle Fork Salt River.

**pH**
6.5-9.0 SU. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the Water Quality Standard, which states water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.

**Oil & Grease**
Monitoring only requirement with a benchmark value of 10 mg/L. The permit writer has used best professional judgment to remove the effluent limitations and implement monitoring only for this parameter. Additionally, a benchmark value will be set at the chronic criteria for the protection of aquatic life [10 CSR 20-7.031 Table A], 10 mg/L. The permit application data and the DMR data confirm that the facility can achieve this value in stormwater runoff. See the data results below.

Application data: 8 mg/L maximum, 6 mg/L average (4 samples)
DMR data: 2 – 6 mg/L

**Nitrogen, total N**
Per 10 CSR 20-7.015(9)(D)7, nutrient monitoring shall be instituted on a quarterly basis for facilities with a design flow greater than 0.1 MGD.

**Phosphorous, total P**
Per 10 CSR 20-7.015(9)(D)7, nutrient monitoring shall be instituted on a quarterly basis for facilities with a design flow greater than 0.1 MGD.

**Nitrate plus Nitrite Nitrogen**
Monitoring only requirement with a benchmark value of 0.68 mg/L. In accordance with the EPA's MSGP, the permit writer has used best professional judgment implement monitoring only for this parameter with a benchmark value of 0.68 mg/L. This parameter will be re-evaluated during the following permit renewal to determine the potential to exceed this benchmark value or cause negative impacts to aquatic life and habitat.

**Aluminum, Total Recoverable**
Monitoring only requirement with a benchmark value of 0.75 mg/L. In accordance with the EPA's MSGP, the permit writer has used best professional judgment implement monitoring only for this parameter with a benchmark value of 0.75 mg/L. This is equivalent to the acute criteria for protection of aquatic life [10 CSR 20-7.031 Table A], 750 µg/L. This parameter will be re-evaluated during the following permit renewal to determine the potential to exceed this benchmark value or cause negative impacts to aquatic life and habitat.

**Iron, Total Recoverable**
Monitoring only requirement with a benchmark value of 1.0 mg/L. In accordance with the EPA's MSGP, the permit writer has used best professional judgment implement monitoring only for this parameter with a benchmark value of 0.75 mg/L. This is equivalent to the chronic criteria for protection of aquatic life [10 CSR 20-7.031 Table A], 1,000 µg/L. This parameter will be re-evaluated during the following permit renewal to determine the potential to exceed this benchmark value or cause negative impacts to aquatic life and habitat.

**MINIMUM SAMPLING AND REPORTING FREQUENCY REQUIREMENTS**

| PARAMETER | SAMPLING FREQUENCY | REPORTING FREQUENCY |
|---|---|---|
| Flow | once/quarter | once/quarter |
| Precipitation | once/day | once/quarter |
| $BOD_5$ | once/quarter | once/quarter |
| pH | once/quarter | once/quarter |
| Oil & Grease | once/quarter | once/quarter |
| Nitrogen, Total N | once/quarter | once/quarter |
| Phosphorus, Total P | once/quarter | once/quarter |
| Nitrate plus Nitrite | once/quarter | once/quarter |
| Aluminum, Total Recoverable | once/quarter | once/quarter |
| Iron, Total Recoverable | once/quarter | once/quarter |

**SAMPLING FREQUENCY JUSTIFICATION**
Sampling and Reporting Frequency was retained from previous permit for those parameters that were continued from that previous permit. Sampling and Reporting Frequency for all new parameters have been set at the same frequency as those existing parameters, except precipitation. Precipitation must be measured daily to ensure the stormwater management and BMPs are functioning properly.

**SAMPLING TYPE JUSTIFICATION**
Sampling Type retained from previous permit for those parameters that were continued from that previous permit. Sampling Types for all new parameters have been established with the same type as the existing parameters, except precipitation. Precipitation shall be collected and recorded as a total measured value.

## Part VI. COMPLIANCE WITH SWPPP REQUIREMENTS TO ACHIEVE BENCHMARK VALUES

The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate pollution of stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged with during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values discussed in Part V above. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure that will assist in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit. Additional information can be found in EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009].

In order to effectively control the pollutants being discharged in stormwater runoff, potential stormwater pollution sources must be identified. Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). The pollutants of concern that have already been identified in Part V above can be used to assist in identifying potential sources. Once these potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed, employ the control measures that have been determined to be adequate to achieve the benchmark values discussed above. Conduct monitoring and inspections of the BMPs to ensure they are working properly. Re-evaluate any BMP that is not achieving compliance with permitting requirements. For example, if sample results from either outfall show values of TSS above the benchmark value, the BMP being employed is deficient in controlling stormwater pollution. Corrective action should be taken to repair, improve or replace the failing BMP. This internal evaluation is required at least once per month but should be continued more frequently if BMPs continue to fail. If failures do occur, continue this trial and error process until appropriate BMPs have been established. If failures continue to occur and the permittee feels there are no practicable or cost-effective BMPs that will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the permittee can submit a request to re-evaluate the benchmark values. This request needs to include a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values. Provide financial data of the company and documentation of cost associated with BMPs for review. This will allow the department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request should also include the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information.

The request shall be submitted in the form of an operating permit modification application. Appropriate application forms can be found on the Department's website: http://dnr.mo.gov/forms/index.html.

## Part VII. ADMINISTRATIVE REQUIREMENTS

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

**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. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than three years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

**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 began on February 20, 2015 and ended on March 23, 2015. No comments were received during the Public Notice period. However, the permit writer revised the permit to remove precipitation monitoring for Outfall #004. The permit writer used best professional judgment to determine that precipitation only needed to be reported on one discharge monitoring report (DMR). Therefore, the permittee will only be required to report precipitation for Outfall #005. Additionally, per Department policy, the newly classified stream will be labeled in the permit with the default name established in the Department's database. The classified segment of the tributary to Middle Fork Salt River is now labeled as 8-20-13 MUDD V1.0 (C) (3960) in the permit. This has no effect on effluent limitations or permit conditions at this time. Once the stream has been given a unique name, the permit can be revised to reflect that unique name.

**DATE OF FACT SHEET**: JANUARY 28, 2015

**COMPLETED BY:**

**LOGAN COLE, ENVIRONMENTAL SPECIALIST**
**MISSOURI DEPARTMENT OF NATURAL RESOURCES**
**WATER PROTECTION PROGRAM**
**OPERATING PERMITS SECTION - INDUSTRIAL UNIT**
**(573)751-5827**
**logan.cole@dnr.mo.gov**

**APPENDIX A – RPA RESULTS:**

**OUTFALL #002**

| Parameter | CMC* | RWC Acute* | CCC* | RWC Chronic* | n** | Range max/min | CV*** | MF | RP Yes/No |
|---|---|---|---|---|---|---|---|---|---|
| Total Residual Chlorine | 19.0 | 0.34 | 10.0 | 0.34 | 68.00 | 0.1/0 | 2.95 | 3.42 | NO |

**OUTFALL #003**

| Parameter | CMC* | RWC Acute* | CCC* | RWC Chronic* | n** | Range max/min | CV*** | MF | RP Yes/No |
|---|---|---|---|---|---|---|---|---|---|
| Total Ammonia as Nitrogen (Summer) mg/L | 12.1 | 25.63 | 1.5 | 25.63 | 32.00 | 6.7/0.1 | 1.54 | 3.83 | YES |
| Total Ammonia as Nitrogen (Winter) mg/L | 12.1 | 3.34 | 3.1 | 3.34 | 33.00 | 1.26/0.01 | 0.96 | 2.65 | YES |

N/A – Not Applicable
* - Units are (µg/L) unless otherwise noted.
** - If the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent.
*** - Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.
RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).
n – Is the number of samples.
MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.
RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request.

# STANDARD CONDITIONS FOR NPDES PERMITS
# ISSUED BY
# THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
# MISSOURI CLEAN WATER COMMISSION
# REVISED
# AUGUST 1, 2014

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

## Part I – General Conditions
## Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
   b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.

2. **Monitoring Requirements**.
   a. Records of monitoring information shall include:
      i. The date, exact place, and time of sampling or measurements;
      ii. The individual(s) who performed the sampling or measurements;
      iii. The date(s) analyses were performed;
      iv. The individual(s) who performed the analyses;
      v. The analytical techniques or methods used; and
      vi. The results of such analyses.
   b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.

3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.

4. **Test Procedures**. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.

5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

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

## Section B – Reporting Requirements

1. **Planned Changes.**
   a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1);
      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
      iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.

2. **Non-compliance Reporting.**
   a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

b. The following shall be included as information which must be reported within 24 hours under this paragraph.
   i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
   ii. Any upset which exceeds any effluent limitation in the permit.
   iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.

3. **Anticipated Noncompliance**. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.

4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.

5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.

6. **Other Information**. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

7. **Discharge Monitoring Reports.**
   a. Monitoring results shall be reported at the intervals specified in the permit.
   b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
   c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.

## Section C – Bypass/Upset Requirements

1. **Definitions.**
   a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
   b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
   c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. **Bypass Requirements.**
   a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.
   b. Notice.
      i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
      ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
   c. Prohibition of bypass.
      i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
         1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
         2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
         3. The permittee submitted notices as required under paragraph 2. b. of this section.
      ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.

3. **Upset Requirements.**
   a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
   b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
      i. An upset occurred and that the permittee can identify the cause(s) of the upset;
      ii. The permitted facility was at the time being properly operated; and
      iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
      iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
   c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

## Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
   a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
   b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement

imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed $10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

2. **Duty to Reapply.**
   a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
   b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
   c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. **Proper Operation and Maintenance**. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

6. **Permit Actions.**
   a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
      i. Violations of any terms or conditions of this permit or the law;
      ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
      iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
      iv. Any reason set forth in the Law or Regulations.
   b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. **Permit Transfer.**
   a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
   b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
   c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.

8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.

10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
    a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
    c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
    d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.

12. **Closure of Treatment Facilities.**
    a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
    b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.

13. **Signatory Requirement.**
    a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
    b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
    c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.

14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

# STANDARD CONDITIONS FOR NPDES PERMITS
# ISSUED BY
# THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
# MISSOURI CLEAN WATER COMMISSION
# March 1, 2014

## PART III – SLUDGE AND BIOSOLIDS FROM DOMESTIC AND INDUSTRIAL WASTEWATER TREATMENT FACILITIES

### SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. 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 the 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), privately owned facilities and sludge or biosolids generated at industrial facilities.
3. Sludge and Biosolids Use and Disposal Practices:
    a. The permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
    b. The 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. The permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
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
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 due 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 Actor under Chapter 644 RSMo.
8. In addition to STANDARD CONDITIONS, the Department may include sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Alternate Limits in the Site Specific Permit.

    Where deemed appropriate, the Department may require an individual site specific permit in order to authorize alternate limitations:
    a. A site specific permit must be obtained for each operating location, including application sites.
    b. To request a site specific permit, an individual permit application, permit fee, 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 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 owner of the 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.

## SECTION B – DEFINITIONS

1. Best Management Practices include agronomic loading rates, soil conservation practices and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. 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.
4. 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.
5. 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.
6. 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 (POTW) or a privately owned facility.
7. Industrial wastewater means any wastewater, also known as process water, not defined as domestic wastewater. Per 40 CFR Part 122, process water means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.
8. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include wastewater treatment lagoons and constructed wetlands for wastewater treatment.
9. 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.
10. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the growing seasons after biosolids application.
11. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
12. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs)
13. Sludge lagoon is part of a mechanical wastewater treatment facility. A 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.
14. Septage is the material pumped from residential septic tanks and similar treatment works (with a design population of less than 150 people). The standard for biosolids from septage is different from other sludges.

## SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and sludge conditions of this permit.
2. The permittee shall operate the facility so that there is no sludge discharged 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. Haulers who land apply septage must obtain a state permit.
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, unless it is required by the accepting facility.

## SECTION E – 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 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 used or disposal method, quantity, and location. Permittee shall also provide the name of the disposal facility and the applicable permit number.

## SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

1. Surface disposal sites of domestic facilities shall comply with the requirements in 40 CFR 503 Subpart C; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Sludge storage lagoons are temporary facilities and are not required to obtain a permit as a solid waste management facility under 10 CSR 80. In order to maintain sludge storage lagoons as storage facilities, accumulated sludge must be removed routinely, but not less than once every two years unless an alternate schedule is approved in the permit. The amount of sludge removed will be dependent on sludge generation and accumulation in the facility. Enough sludge must be removed to maintain adequate storage capacity in the facility.
    a. 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
    b. Permittee shall close the lagoon in accordance with Section H.

## SECTION G – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the facility description or the special conditions of the issued NPDES permit.
2. Land application sites within a 20 miles 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 otherwise specified in a site specific permit. If the permittee's land application site is greater than a 20 mile radius of the wastewater treatment facility, approval must be granted from the Department.
3. Land application shall not adversely affect a threatened or endangered species or its designated critical habitat.
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 domestic sludge except for when sludge meets the definition of biosolids.
    b. This permit authorizes "Class A or B" biosolids derived from domestic wastewater and/or process water sludge to be land applied onto grass land, crop land, timber 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 after two years of proper operation with acceptable testing documentation that shows the biosolids meet Class A criteria. A shorter length of testing will be allowed with prior approval from the Department. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site specific permit.
    a. After Class B biosolids have been land applied, public access must be restricted for 12 months.
    b. Class B biosolids are only land applied to root crops, home gardens or vegetable crops whose edible parts will not be for human consumption.

6. Agricultural and Silvicultural Sites:

Septage – Based on Water Quality guide 422(WQ422) published by the University of Missouri

a. Haulers that land apply septage must obtain a state permit
b. Do not apply more than 30,000 gallons of septage per acre per year.
c. Septage tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to other mechanical type treatment facilities.
d. To meet Class B sludge requirements, maintain septage at 12 pH for at least thirty (30) minutes before land application. 50 pounds of hydrated lime shall be added to each 1,000 gallons of septage in order to meet pathogen and vector stabilization for septage biosolids applied to crops, pastures or timberland.
e. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.

Biosolids - Based on Water Quality guide 423, 424, and 425 (WQ423, WQ424, WQ425) published by the University of Missouri;

a. Biosolids shall be monitored to determine the quality for regulated pollutants
b. The number of samples taken is directly related to the amount of sludge produced by the facility (See Section I of these Standard Conditions). Report as dry weight unless otherwise specified in the site specific permit. Samples should be taken only during land application periods. When necessary, it is permissible to mix biosolids with lower concentrations of biosolids as well as other suitable Department approved material to reach the maximum concentration of pollutants allowed.
c. Table 1 gives the maximum concentration allowable to protect water quality standards

**TABLE 1**

| Biosolids Ceiling Concentration [1] | |
|---|---|
| Pollutant | Milligrams per kilogram dry weight |
| Arsenic | 75 |
| Cadmium | 85 |
| Copper | 4,300 |
| Lead | 840 |
| Mercury | 57 |
| Molybdenum | 75 |
| Nickel | 420 |
| Selenium | 100 |
| Zinc | 7,500 |

[1] Land application is not allowed if the sludge concentration exceeds the maximum limits for any of these pollutants

d. The low metal concentration biosolids has reduced requirements because of its higher quality and can safely be applied for 100 years or longer at typical agronomic loading rates. (See Table 2)

**TABLE 2**

| Biosolids Low Metal Concentration [1] | |
|---|---|
| Pollutant | Milligrams per kilogram dry weight |
| Arsenic | 41 |
| Cadmium | 39 |
| Copper | 1,500 |
| Lead | 300 |
| Mercury | 17 |
| Nickel | 420 |
| Selenium | 36 |
| Zinc | 2,800 |

[1] You may apply low metal biosolids without tracking cumulative metal limits, provided the cumulative application of biosolids does not exceed 500 dry tons per acre.

e. Each pollutant in Table 3 has an annual and a total cumulative loading limit, based on the allowable pounds per acre for various soil categories.

**TABLE 3**

| Pollutant | CEC 15+ | | CEC 5 to 15 | | CEC 0 to 5 | |
|---|---|---|---|---|---|---|
| | Annual | Total [1] | Annual | Total [1] | Annual | Total [1] |
| Arsenic | 1.8 | 36.0 | 1.8 | 36.0 | 1.8 | 36.0 |
| Cadmium | 1.7 | 35.0 | 0.9 | 9.0 | 0.4 | 4.5 |
| Copper | 66.0 | 1,335.0 | 25.0 | 250.0 | 12.0 | 125.0 |
| Lead | 13.0 | 267.0 | 13.0 | 267.0 | 13.0 | 133.0 |
| Mercury | 0.7 | 15.0 | 0.7 | 15.0 | 0.7 | 15.0 |
| Nickel | 19.0 | 347.0 | 19.0 | 250.0 | 12.0 | 125.0 |
| Selenium | 4.5 | 89.0 | 4.5 | 44.0 | 1.6 | 16.0 |
| Zinc | 124.0 | 2,492.0 | 50.0 | 500.0 | 25.0 | 250.0 |

[1] Total cumulative loading limits for soils with equal or greater than 6.0 pH (salt based test) or 6.5 pH (water based test)

**TABLE 4** - Guidelines for land application of other trace substances [1]

| Cumulative Loading | |
|---|---|
| Pollutant | Pounds per acre |
| Aluminum | 4,000[2] |
| Beryllium | 100 |
| Cobalt | 50 |
| Fluoride | 800 |
| Manganese | 500 |
| Silver | 200 |
| Tin | 1,000 |
| Dioxin | (10 ppt in soil)[3] |
| Other | [4] |

[1] Design of land treatment systems for Industrial Waste, 1979. Michael Ray Overcash, North Carolina State University and Land Treatment of Municipal Wastewater, EPA 1981.)

[2] This applies for a soil with a pH between 6.0 and 7.0 (salt based test) or a pH between 6.5 to 7.5 (water based test). Case-by-case review is required for higher pH soils.

[3] Total Dioxin Toxicity Equivalents (TEQ) in soils, based on a risk assessment under 40 CFR 744, May 1998.

[4] Case by case review. Concentrations in sludge should not exceed the 95$^{th}$ percentile of the National Sewage Sludge Survey, EPA, January 2009.

Best Management Practices – Based on Water Quality guide 426 (WQ426) published by the University of Missouri

a. Use best management practices when applying biosolids.
b. Biosolids cannot discharge from the land application site
c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
e. Do not apply more than the agronomic rate of nitrogen needed.
f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil and crop removals unless the nitrogen content of the biosolids does not exceed 50,000 milligrams per kilogram of total nitrogen on a dry weight basis and biosolids application rate is less than two dry tons per acre per year.
   i. PAN can be determined as follows and is in accordance with WQ426
   (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).
   [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application.

g. Buffer zones are as follows:
   i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;
   ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
   iii. 150 feet if dwellings;
   iv. 100 feet of wetlands or permanent flowing streams;
   v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.

h. Slope limitation for application sites are as follows;
   i. A slope 0 to 6 percent has no rate limitation
   ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels
   iii. Slopes > 12, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.

i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.

j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the Department.

k. Biosolids / sludge applicators must keep detailed records up to five years.

## SECTION H – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical, industrial, and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility 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. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the Department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan 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 or ash pond 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 without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
   c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre.
      i. PAN can be determined as follows:
      (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).
      [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application.
4. When closing a domestic 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 Section B of these standard conditions. 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 a 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 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.

5. Residuals left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berm shall be demolished, and the site shall be graded and contain ≥70% vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoons and/or earthen structure and/or ash pond closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200
7. When closing a mechanical wastewater and/or industrial process wastewater plant; all sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
    a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain ≥70% vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
    b. Per 10 CSR 20-6.015(4)(B)6, Hazardous Waste shall not be land applied or disposed during industrial and mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations under 10 CSR 25.
    c. After demolition of the mechanical plant / industrial plant, the site must only contain clean fill defined in RSMo 260.200 (5) as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill or other beneficial use. Other solid wastes must be removed.
8. If sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or H, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for 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 I – 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. Please see the table below.

**TABLE 5**

| Design Sludge Production (dry tons per year) | Monitoring Frequency (See Notes 1 and 2) | | | |
|---|---|---|---|---|
| | Metals, Pathogens and Vectors | Nitrogen TKN [1] | Nitrogen PAN [2] | Priority Pollutants and TCLP [3] |
| 0 to 100 | 1 per year | 1 per year | 1 per month | 1 per year |
| 101 to 200 | biannual | biannual | 1 per month | 1 per year |
| 201 to 1,000 | quarterly | quarterly | 1 per month | 1 per year |
| 1,001 to 10,000 | 1 per month | 1 per month | 1 per week | --[4] |
| 10,001 + | 1 per week | 1 per week | 1 per day | --[4] |

[1] Test total Kjeldahl nitrogen, if biosolids application is 2 dry tons per acre per year or less

[2] Calculate plant available nitrogen, if biosolids application is more than 2 dry tons per acre per year.

[3] Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) and toxicity characteristic leaching procedure (40 CFR 261.24) is required only for permit holders that must have a pre-treatment program.

[4] One sample for each 1,000 dry tons of sludge.

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids. This data shall be used to calculate the dry tons of sludge applied per acre.

Note 2: Total Phosphorus: Total phosphorus and total potassium shall be tested at the same monitoring frequency as metals.

2. If you own a wastewater treatment lagoon or sludge lagoon that is cleaned out once a year or less, you may choose to sample only when the sludge is removed or the lagoon is closed. Test one composite sample for each 100 dry tons of sludge or biosolids removed from the lagoon during the year within the lagoon at closing. Composite sample must represent various areas at one-foot depth.
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. At this time, the Department recommends monitoring requirements shall be performed in accordance with, "POTW Sludge Sampling and Analysis Guidance Document," United States Environmental Protection Agency, August 1989, and the subsequent revisions.

## SECTION J – 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. Reports 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)
    ATTN: Sludge Coordinator

    EPA Region VII
    Water Compliance Branch (WACM)
    Sludge Coordinator
    11201 Renner Blvd.
    Lenexa, KS 66219

5. Annual Report Contents. The annual report shall include the following:
    a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the 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 the end of the 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.
        i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
        ii. 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 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 or biosolids use permit.

g. Land Application Sites:

i. 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 a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. If biosolids application exceeds 2 dry tons/acre/year, reports biosolids nitrogen results, Plant Available Nitrogen (PAN) in pounds/acre, crop nitrogen requirement.

ii. If the "Low Metals" criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.

iii. Report the method used for compliance with pathogen and vector attraction requirements.

iv. Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.

JUL 02 2012

AP 12241

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

WATER PROTECTION PROGRAM

| FOR AGENCY USE ONLY | |
|---|---|
| CHECK NUMBER: NO FEE required | |
| DATE RECEIVED: 7/2/12 | FEE SUBMITTED: Ø |

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

**1.** This application is for:

- ☐ An operating permit and antidegradation review public notice
- ☐ A construction permit following an appropriate operating permit and antidegradation review public notice
- ☐ A construction permit and concurrent operating permit and antidegradation review public notice
- ☐ A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)
- ☐ An operating permit for a new or unpermitted facility — Construction Permit # _____
- ☑ An operating permit renewal: permit # MO- 0124575 — Expiration Date 1-3-2013
- ☐ An operating permit modification: permit # MO-_____ — Reason: _____

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

**2. FACILITY**

| NAME | | TELEPHONE WITH AREA CODE | |
|---|---|---|---|
| POET BIOREFINING-MACON | | (660) 385-2789 | |
| | | FAX (660) 385-3796 | |
| ADDRESS (PHYSICAL) | CITY | STATE | ZIP CODE |
| 30211 Major Ave | Macon | MO | 63552 |

**3. OWNER**

| NAME | E-MAIL ADDRESS | TELEPHONE WITH AREA CODE | |
|---|---|---|---|
| POET BIOREFINING-MACON | | (660) 385-2789 | |
| | | FAX (660) 385-3796 | |
| ADDRESS (MAILING) | CITY | STATE | ZIP CODE |
| 30211 Major Ave | Macon | MO | 63552 |

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

**4. CONTINUING AUTHORITY**

| NAME | | TELEPHONE WITH AREA CODE | |
|---|---|---|---|
| SAME AS ABOVE | | | |
| | | FAX | |
| ADDRESS (MAILING) | CITY | STATE | ZIP CODE |
| | | | |

**5. OPERATOR**

| NAME | CERTIFICATE NUMBER | TELEPHONE WITH AREA CODE | |
|---|---|---|---|
| SAME AS ABOVE | | | |
| | | FAX | |
| ADDRESS (MAILING) | CITY | STATE | ZIP CODE |
| | | | |

**6. FACILITY CONTACT**

| NAME | TITLE | TELEPHONE WITH AREA CODE |
|---|---|---|
| STEVE BURNETT | General Manager | (660) 385-2789 |
| | | FAX |

**7. ADDITIONAL FACILITY INFORMATION**

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

001 NW ¼ NW ¼ Sec 17 T 57 R 13 Maco County
UTM Coordinates Easting (X):_____ Northing (Y): _____
*For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)*

002 NW ¼ NW ¼ Sec 17 T 57 R 13 maco County
UTM Coordinates Easting (X): _____ Northing (Y): _____

003 NW ¼ NW ¼ Sec 17 T 57 R 13 maco County
UTM Coordinates Easting (X):_____ Northing (Y): _____

004 NW ¼ NW ¼ Sec 17 T 57 R 13 maco County
UTM Coordinates Easting (X):_____ Northing (Y): _____

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

001 – SIC 2869 and NAICS _____ 002 – SIC 2813 and NAICS _____
003 – SIC 4952 and NAICS _____ 004 – SIC 2869 and NAICS _____

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

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

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

| NAME | | | |
|---|---|---|---|
| EVERETT AUSMUS | | | |
| **ADDRESS** | **CITY** | **STATE** | **ZIP CODE** |
| US HIGHWAY 36 | ANABEL | MO | 63431 |

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

| NAME AND OFFICIAL TITLE (TYPE OR PRINT) | TELEPHONE WITH AREA CODE |
|---|---|
| Steve Burnett | (660) 385-2789 |
| SIGNATURE: Steve Burnett | DATE SIGNED: 6/28/12 |

MO 780-1479 (01-09)

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

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

HAVE YOU INCLUDED:

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

FORM A

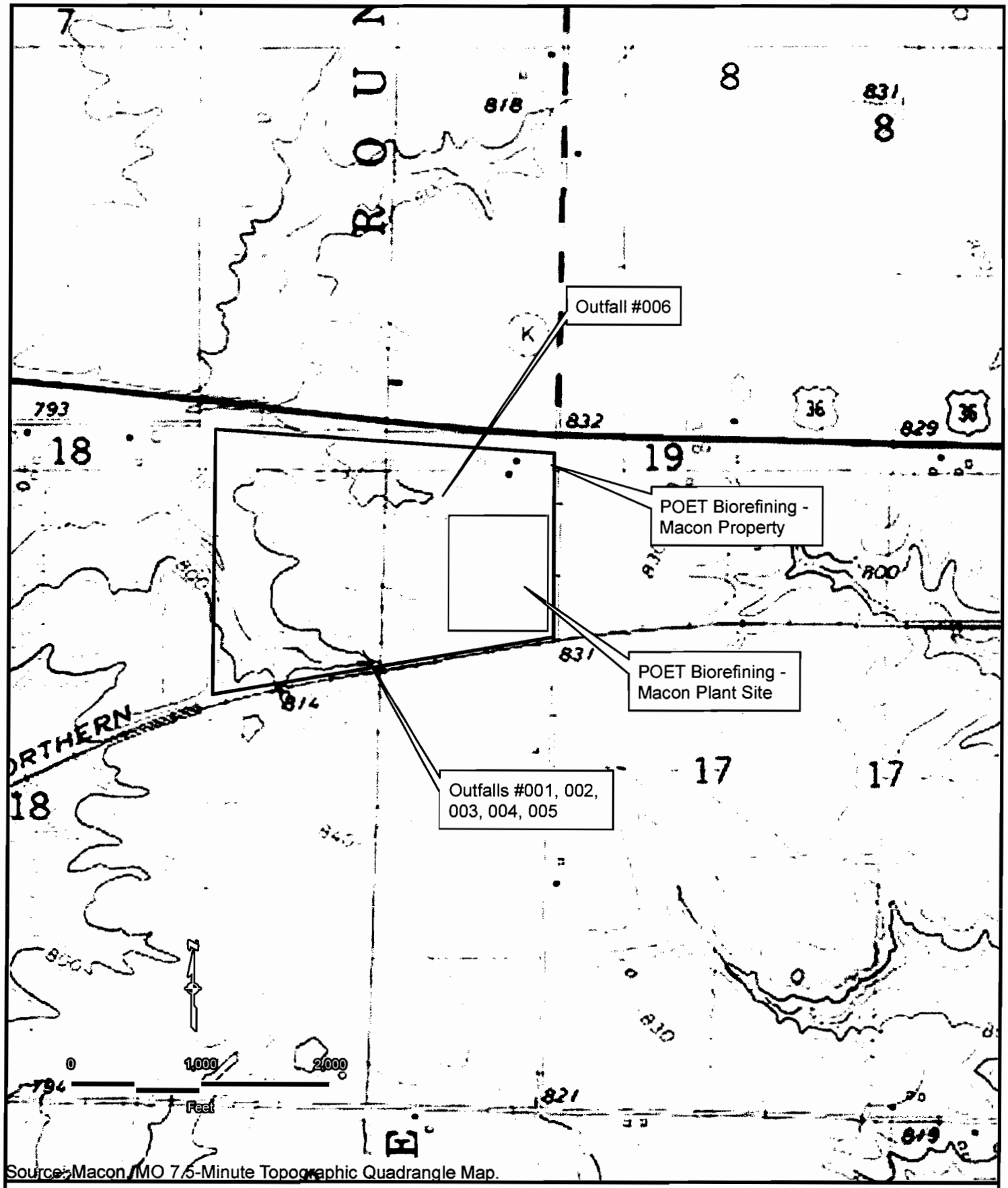
(ADDITIONAL INFORMATION)

7.0 Additional Facility Information

7.10 Legal Description of Outfalls.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 005 | NW | ¼ | NW | ¼ | Sec | 17 | T | 57 | R | 13 | Macon | County |
| 006 | NW | ¼ | NW | ¼ | Sec | 17 | T | 57 | R | 13 | Macon | County |
| | | ¼ | | ¼ | Sec | | T | | R | | | County |
| | | ¼ | | ¼ | Sec | | T | | R | | | County |

Maps see
file



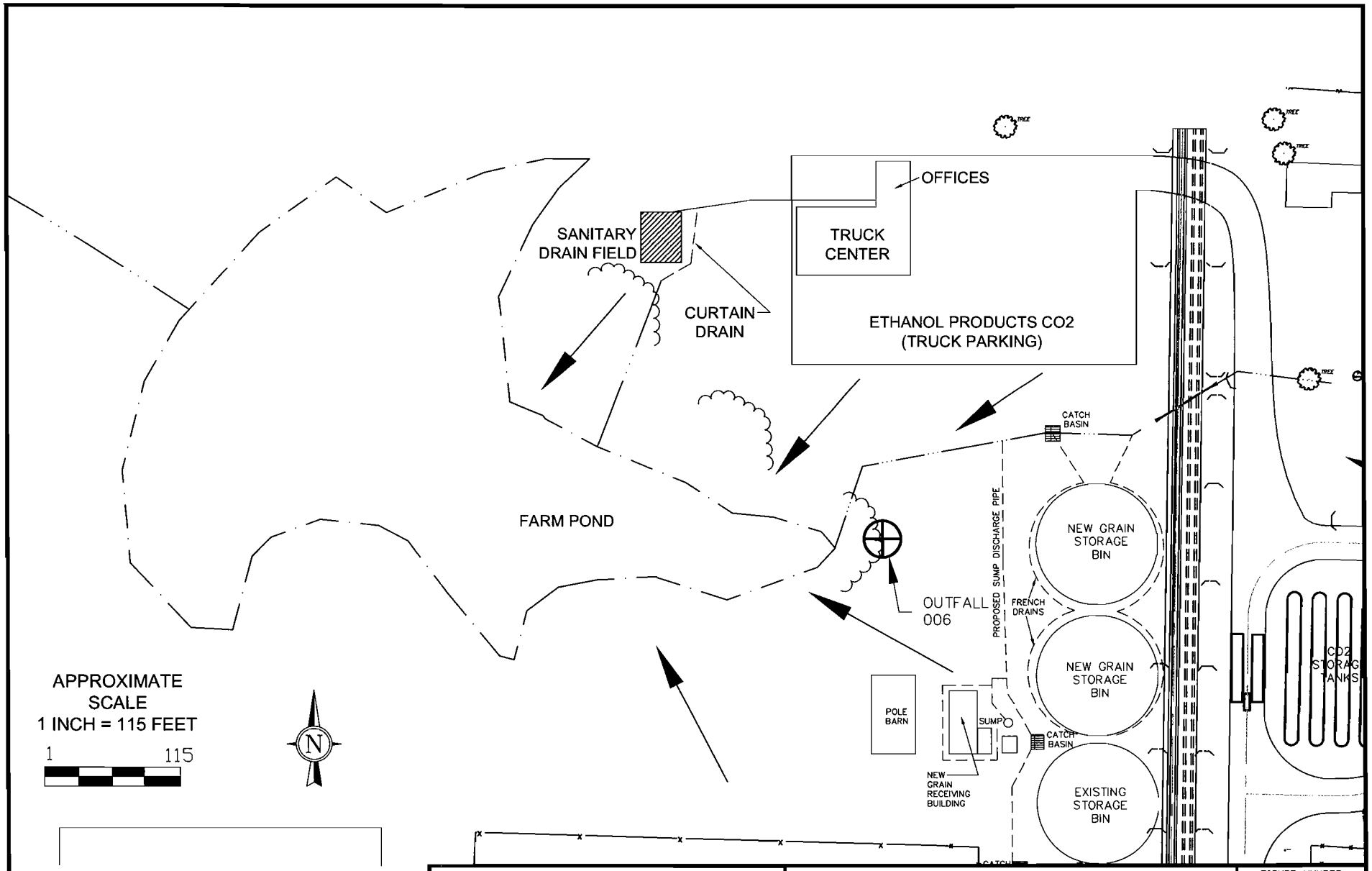

Source: Macon, MO 7.5-Minute Topographic Quadrangle Map.

AECOM
161 Cheshire Ln N
Suite 500
Minneapolis, MN 55441
T: 763-852-4200
F: 763-473-0400
www.aecom.com
Copyright ©2010 By: AECOM

# SITE LOCATION

POET BIOREFINING - MACON
30211 MAJOR AVENUE
MACON, MISSOURI

| | | |
|---|---|---|
| Drawn: | KLM | 06/14/2012 |
| Approved: | CW | 06/14/2012 |
| Scale: | 1" = 1000' | |
| PROJECT NUMBER | 60242700 | |
| FIGURE NUMBER | 1 | |

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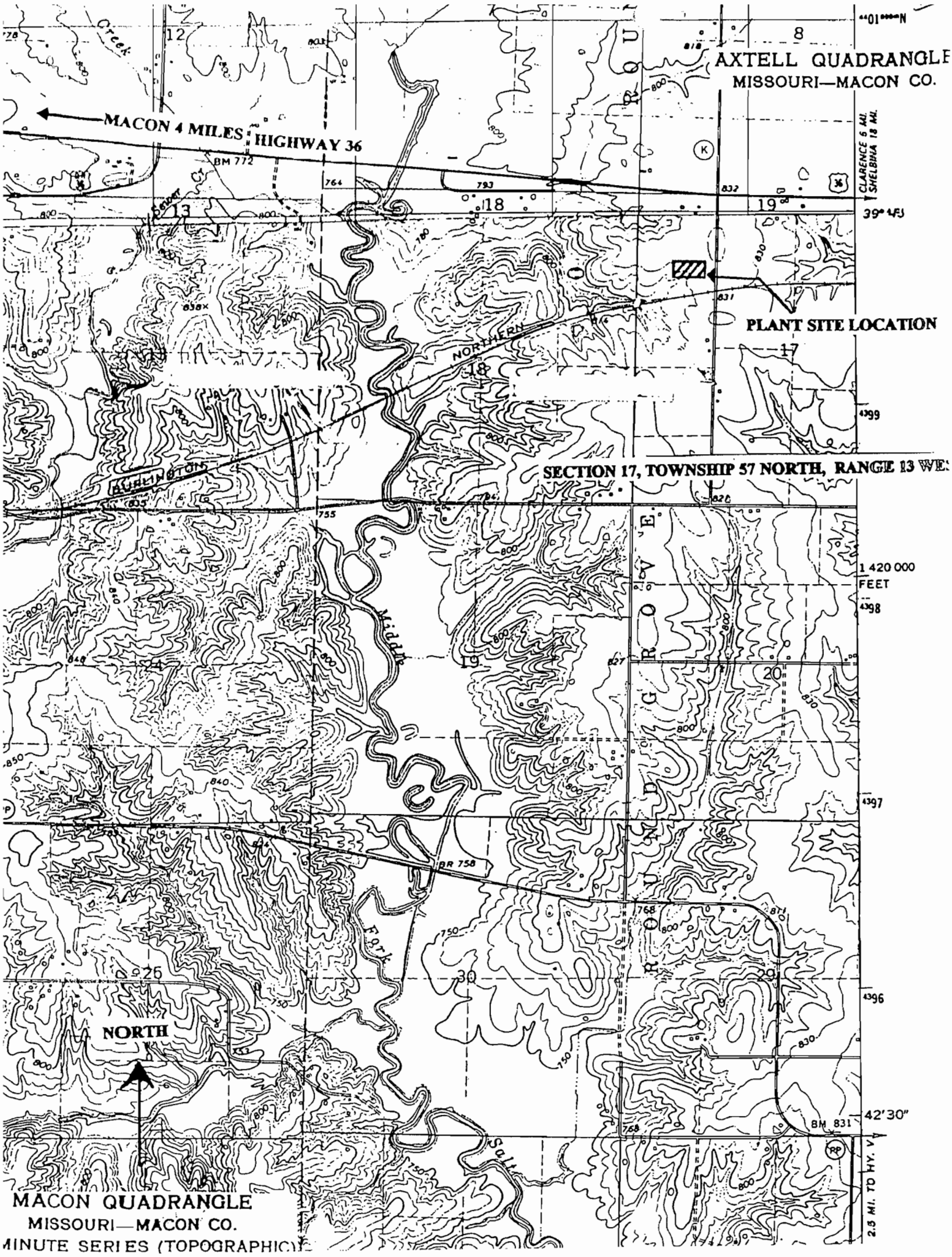
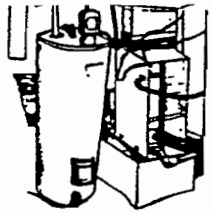
PHONE: (763) 852-4200
FAX: (763) 473-0400
WEB: HTTP://WWW.AECOM.COM

SITE DRAINAGE - ZOOM
POET Biorefining - Macon
Macon, Missouri

FIGURE NUMBER: 3

| DRAWN BY: | DATE: | PROJECT NUMBER: | SHEET NUMBER: |
|---|---|---|---|
| AC | 06-14-2012 | 12216-017 | 1 |


AXTELL QUADRANGLE
MISSOURI—MACON CO.
MACON 4 MILES
HIGHWAY 36
PLANT SITE LOCATION
SECTION 17, TOWNSHIP 57 NORTH, RANGE 13 WE
NORTHERN
BURLINGTON
Middle
Fork
Salt
NORTH
MACON QUADRANGLE
MISSOURI—MACON CO.
MINUTE SERIES (TOPOGRAPHIC)
1 420 000
FEET
42'30"
CLARENCE 5 MI.
SHELBINA 18 MI.
2.5 MI. TO HY. V



**SAVE ON YOUR HOME ENERGY COSTS -**

**Install a Ground Source Heat Pump**

Complete installation is available thru your Cooperative at an affordable cost!!!

***Call Today and Start Saving $$$$***

BUSINESS HWY. 36 EAST • MACON 660-385-3175

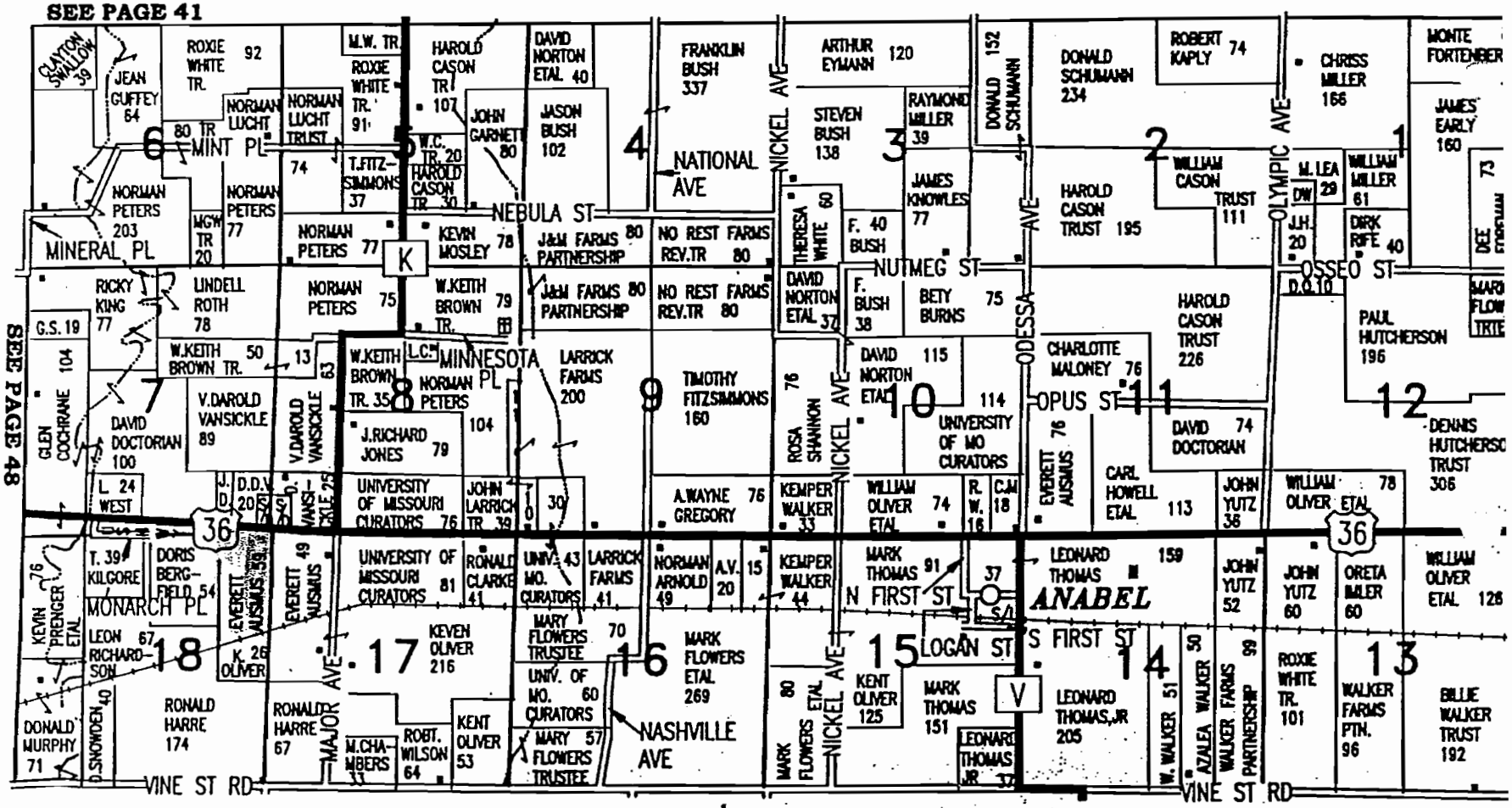

# ROUND GROVE

# TOWNSHIP 57N • RANGE 13W

***Tax I.D. #20***

SEE PAGE 41

SEE PAGE 48

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WATER 03 2012

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
(SEE MAP FOR APPROPRIATE REGIONAL OFFICE)

**FORM C – APPLICATION FOR DISCHARGE PERMIT – MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS**

| FOR AGENCY USE ONLY | |
|---|---|
| CHECK NO. | |
| DATE RECEIVED | FEE SUBMITTED |

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

1.00 NAME OF FACILITY

Poet Biorefining - MACON

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

MO-0124575

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

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

A. FIRST 2869 B. SECOND 2813

C. THIRD 4952 D. FOURTH

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

OUTFALL NUMBER (LIST) NW ¼ NW ¼ SEC 17 T 57N R 13W MACON County

| | | | | | | |
|---|---|---|---|---|---|---|
| # 002 | | | | | | |
| 003 | NW | NW | 17 | 57N | 13W | Macon |
| 004 | NW | NW | 17 | 57N | 13W | Macon |
| 005 | NW | NW | 17 | 57N | 13W | MACON |
| 006 | NW | NW | 17 | 57N | 13W | MACON |

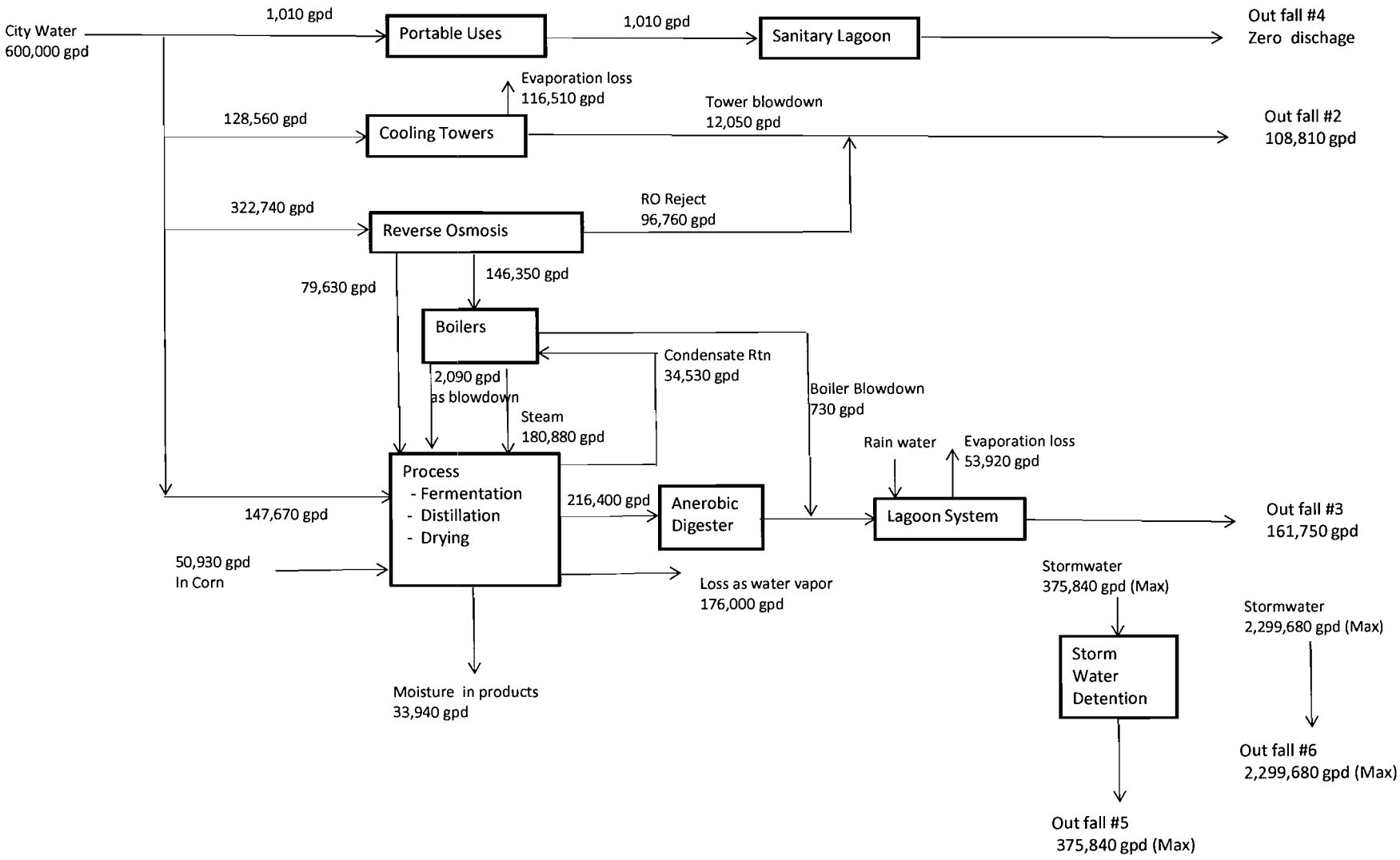
2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER.

| OUTFALL NUMBER (LIST) | RECEIVING WATER |
|---|---|
| 002, 003, 004, 005, 006 | Middle Fork of Salt River |

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS:

Production of ethanol by fermentation of CORN

POET Biorefining -- Macon
Line Diagram - Water Balance



2.40

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, public sewers and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of 1. All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water and storm water runoff. 2. The average flow contributed by each operation. 3. The treatment received by the wastewater. Continue on additional sheets if necessary.

| 1. OUTFALL NO. | 2. OPERATION(S) CONTRIBUTING FLOW | | 3. TREATMENT | |
|---|---|---|---|---|
| (LIST) | A. OPERATION (LIST) | B. AVERAGE FLOW (INCLUDE UNITS) (MAXIMUM FLOW) | A. DESCRIPTION | B. LIST CODES FROM TABLE A |
| 002 | RO Reject water | Avg. 50 gpm | Discharge to | 4A |
| | | MAX 67 gpm | surface waters | |
| | Cooling tower | Avg 7 gpm | | 4A |
| | Blowdown | Max 8 gpm | | |
| 003 | Process Water | Avg 100 gpm | Aerated | 3B |
| | | MAX. 115 gpm | Lagoon | |
| | Boiler blowdown | Avg 1.0 gpm | | 3B |
| | | Max 1.5 gpm | | |
| 004 | Sanitary Waste | zero Discharge | Septic Tank | 3C, 3F |
| | | | Followed by zero Discharge lagoon | |
| | | | | |
| 005 | Storm Water | Avg 0.0 gpm | Storm water | 14, 4A |
| | | MAX 261. gpm | Detention Basin | |
| | | | | |
| 006 | Stormwater | Avg 0.0 gpm | Storm Water | 4A |
| | | MAX 1597 gpm | Runoff | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**2.40 CONTINUED**

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

☐ **YES** *(COMPLETE THE FOLLOWING TABLE)* ☒ **NO** *(GO TO SECTION 2.50)*

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

2.50 MAXIMUM PRODUCTION

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

☒ **YES** *(COMPLETE B.)* ☐ **NO** *(GO TO SECTION 2.60)*

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

☐ **YES** *(COMPLETE C.)* ☒ **NO** *(GO TO SECTION 2.60)*

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

| 1. MAXIMUM QUANTITY | | | 2. AFFECTED OUTFALLS *(list outfall numbers)* |
|---|---|---|---|
| A. QUANTITY PER DAY | B. UNITS OF MEASURE | C. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)* | |
| | | | |

2.60 IMPROVEMENTS

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

☐ **YES** *(COMPLETE THE FOLLOWING TABLE)* ☒ **NO** *(GO TO 3.00)*

| 1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC. | 2. AFFECTED OUTFALLS | | 3. BRIEF DESCRIPTION OF PROJECT | 4. FINAL COMPLIANCE DATE | |
|---|---|---|---|---|---|
| | | | | A. REQUIRED | B. PROJECTED |
| | | | | | |

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

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

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

A. & B. SEE INSTRUCTIONS BEFORE PROCEEDING – COMPLETE ONE TABLE FOR EACH OUTFALL – ANNOTATE THE OUTFALL NUMBER IN THE SPACE PROVIDED.
NOTE: TABLE 1 IS INCLUDED ON SEPARATE SHEETS NUMBERED FROM PAGE 6 TO PAGE 7.

C. USE THE SPACE BELOW TO LIST ANY OF THE POLLUTANTS LISTED IN PART B OF THE INSTRUCTIONS, WHICH YOU KNOW OR HAVE REASON TO BELIEVE IS DISCHARGED OR MAY BE DISCHARGED FROM ANY OUTFALL. FOR EVERY POLLUTANT YOU LIST, BRIEFLY DESCRIBE THE REASONS YOU BELIEVE IT TO BE PRESENT AND REPORT ANY ANALYTICAL DATA IN YOUR POSSESSION.

OF #2

| 1. POLLUTANT | 2. SOURCE | 1. POLLUTANT | 2. SOURCE |
|---|---|---|---|
| Sulfate | Dechlorinization | | |
| Chloride | In water supply | | |
| Chlorine | Residual | | |
| | | | |
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3.10 BIOLOGICAL TOXICITY TESTING DATA

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

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

Whole effluent toxicity performed on 002 effluent
UNDER Normal conditions "wet" test passes Repeatably

3.20 CONTRACT ANALYSIS INFORMATION

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

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

| A. NAME | B. ADDRESS | C. TELEPHONE *(area code and number)* | D. POLLUTANTS ANALYZED *(list)* |
|---|---|---|---|
| Innovatio Labs | 120 E DAVIS St<br>Fayette MO 65248 | 660.248.1911 | Toxicity<br>BOD, TSS, PH<br>O+G. |

3.30 CERTIFICATION

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

| NAME AND OFFICIAL TITLE (TYPE OR PRINT) | TELEPHONE NUMBER (AREA CODE AND NUMBER |
|---|---|
| Steve Burnett General MANAGER | 660-385-2789 |
| SIGNATURE (SEE INSTRUCTIONS)<br>Steve Burnett | DATE SIGNED<br>6/28/12 |

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

**FORM C**
**TABLE 1 FOR 3.00 ITEM A AND B**

**INTAKE AND EFFLUENT CHARACTERISTICS** *(continued from page 3 of Form 2-C)* Historial DATA 2011

OUTFALL NO. 002

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

| 1. POLLUTANT | 2. EFFLUENT | | | | | | | 3. UNITS *(specify if blank)* | | 4. INTAKE *(optional)* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE *(if available)* | | C. LONG TERM AVRG. VALUE *(if available)* | | D. NO. OF ANAL-YSES | A. CONCEN-TRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANAL-YSES |
| | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| A. Biochemical Oxygen Demand *(BOD)* | | | | | | | | | | | | |
| B. Chemical Oxygen Demand *(COD)* | | | | | | | | | | | | |
| C. Total Organic Carbon *(TOC)* | | | | | | | | | | | | |
| D. Total Suspended Solids *(TSS)* | | | | | | | | | | | | |
| E. Ammonia *(as N)* | | | | | | | | | | | | |
| F. Flow | VALUE 170,000 gpd | | VALUE | | VALUE | | | | | VALUE | | |
| G. Temperature *(winter)* | VALUE 17 C | | VALUE | | VALUE | | | °C | | VALUE | | |
| H. Temperature *(summer)* | VALUE 33 C | | VALUE | | VALUE | | | °C | | VALUE | | |
| I. pH | MINIMUM 6.0 | MAXIMUM 9.0 | MINIMUM | MAXIMUM | | | | STANDARD UNITS | | | | |

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

| 1. POLLUTANT AND CAS NUMBER *(if available)* | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE *(optional)* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. BE-LIEVED PRE-SENT | B. BE-LIEVED AB-SENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE *(if available)* | | C. LONG TERM AVRG. VALUE *(if available)* | | D. NO. OF ANAL-YSES | A. CONCEN-TRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANAL-YSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| A. Bromide (24959-67-9) | | X | | | | | | | | | | | | |
| B. Chlorine Total Residual | X | | 0.01 | | | | 0.01 | | 12 | mg/L | lbs | | | |
| C. Color | | X | | | | | | | | | | | | |
| D. Fecal Coliform | | X | | | | | | | | | | | | |
| E. Fluoride (16984-48-8) | | X | | | | | | | | | | | | |
| F. Nitrate–Nitrite *(as N)* | | X | | | | | | | | | | | | |

CONTINUED FROM FRONT

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE (if available) | | C. LONG TERM AVRG. VALUE (if available) | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANALYSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| G. Nitrogen Total Organic *(as N)* | | X | | | | | | | | | | | | |
| H. Oil and Grease | X | | <6 | | | | <6 | | 12 | mg/L | lbs | | | |
| I. Phosphorus *(as P)* Total (7723-14-0) | | X | | | | | | | | | | | | |
| **J. RADIOACTIVITY** | | | | | | | | | | | | | | |
| (1) Alpha Total | | X | | | | | | | | | | | | |
| (2) Beta Total | | X | | | | | | | | | | | | |
| (3) Radium Total | | X | | | | | | | | | | | | |
| (4) Radium 226 Total | | X | | | | | | | | | | | | |
| K. Sulfate *(as $SO^4$)* (14808-79-8) | X | | 715 | | | | 487 | | 12 | mg/L | lbs | | | |
| L. Sulfide *(as S)* | | X | | | | | | | | | | | | |
| M. Sulfite *(as $SO^3$)* (14265-45-3) | | X | | | | | | | | | | | | |
| N. Surfactants | | X | | | | | | | | | | | | |
| O. Aluminum Total (7429-90-5) | | X | | | | | | | | | | | | |
| P. Barium Total (7440-39-3) | | X | | | | | | | | | | | | |
| Q. Boron Total (7440-42-8) | | X | | | | | | | | | | | | |
| R. Cobalt Total (7440-48-4) | | X | | | | | | | | | | | | |
| S. Iron total (7439-89-6) | | X | | | | | | | | | | | | |
| T. Magnesium Total (7439-95-4) | | X | | | | | | | | | | | | |
| U. Molybdenum Total (7439-98-7) | | X | | | | | | | | | | | | |
| V. Manganese Total (7439-96-5) | | X | | | | | | | | | | | | |
| W. Tin Total (7440-31-5) | | X | | | | | | | | | | | | |
| X. Titanium Total (7440-32-6) | | X | | | | | | | | | | | | |

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

A. & B. SEE INSTRUCTIONS BEFORE PROCEEDING – COMPLETE ONE TABLE FOR EACH OUTFALL – ANNOTATE THE OUTFALL NUMBER IN THE SPACE PROVIDED.
NOTE: TABLE 1 IS INCLUDED ON SEPARATE SHEETS NUMBERED FROM PAGE 6 TO PAGE 7.

C. USE THE SPACE BELOW TO LIST ANY OF THE POLLUTANTS LISTED IN PART B OF THE INSTRUCTIONS, WHICH YOU KNOW OR HAVE REASON TO BELIEVE IS DISCHARGED OR MAY BE DISCHARGED FROM ANY OUTFALL. FOR EVERY POLLUTANT YOU LIST, BRIEFLY DESCRIBE THE REASONS YOU BELIEVE IT TO BE PRESENT AND REPORT ANY ANALYTICAL DATA IN YOUR POSSESSION.

OF #003

| 1. POLLUTANT | 2. SOURCE | 1. POLLUTANT | 2. SOURCE |
|---|---|---|---|
| Ammonia | process/Lagoons | | |
| O.I & Grease | process - corn | | |
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3.10 BIOLOGICAL TOXICITY TESTING DATA

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

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

Whole effluent toxicity performed on 003 effluent
Under normal Conditions "wet" test passes Repeatably

3.20 CONTRACT ANALYSIS INFORMATION

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

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

| A. NAME | B. ADDRESS | C. TELEPHONE *(area code and number)* | D. POLLUTANTS ANALYZED *(list)* |
|---|---|---|---|
| Innovatia LAb | 120 E. DAVIS St<br>Fayette, Mo 65248 | 660-248-1911 | Toxicity<br>BOD, TSS, PH<br>O&G, |

3.30 CERTIFICATION

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

| NAME AND OFFICIAL TITLE (TYPE OR PRINT) | TELEPHONE NUMBER (AREA CODE AND NUMBER |
|---|---|
| Steve Burnett General Manager | 660-385-2789 |
| SIGNATURE (SEE INSTRUCTIONS)<br>Steve Burnett | DATE SIGNED<br>6/28/12 |

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

**FORM C**
**TABLE 1 FOR 3.00 ITEM A AND B**

**INTAKE AND EFFLUENT CHARACTERISTICS** *(continued from page 3 of Form 2-C)* Historical DATA 2011

OUTFALL NO. 003

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

| 1. POLLUTANT | 2. EFFLUENT | | | | | | | 3. UNITS *(specify if blank)* | | 4. INTAKE *(optional)* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE *(if available)* | | C. LONG TERM AVRG. VALUE *(if available)* | | D. NO. OF ANAL-YSES | A. CONCEN-TRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANAL-YSES |
| | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| A. Biochemical Oxygen Demand *(BOD)* | 33 | | | | 9. | | 12 | mg/L | lbs | | | |
| B. Chemical Oxygen Demand *(COD)* | | | | | | | | | | | | |
| C. Total Organic Carbon *(TOC)* | | | | | | | | | | | | |
| D. Total Suspended Solids *(TSS)* | 36 | | | | 21 | | 12 | mg/L | | | | |
| E. Ammonia *(as N)* | | | | | | | | | | | | |
| F. Flow | VALUE 191,000 gpd | | VALUE | | VALUE | | | | | VALUE | | |
| G. Temperature *(winter)* | VALUE 38 | | VALUE | | VALUE | | | °C | | VALUE | | |
| H. Temperature *(summer)* | VALUE 38 | | VALUE | | VALUE | | | °C | | VALUE | | |
| I. pH | MINIMUM 6.0 | MAXIMUM 9.0 | MINIMUM | MAXIMUM | | | | STANDARD UNITS | | | | |

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

| 1. POLLUTANT AND CAS NUMBER *(if available)* | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE *(optional)* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. BE-LIEVED PRE-SENT | B. BE-LIEVED AB-SENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE *(if available)* | | C. LONG TERM AVRG. VALUE *(if available)* | | D. NO. OF ANAL-YSES | A. CONCEN-TRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANAL-YSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| A. Bromide (24959-67-9) | | X | | | | | | | | | | | | |
| B. Chlorine Total Residual | | X | | | | | | | | | | | | |
| C. Color | | X | | | | | | | | | | | | |
| D. Fecal Coliform | | X | | | | | | | | | | | | |
| E. Fluoride (16984-48-8) | | X | | | | | | | | | | | | |
| F. Nitrate–Nitrite *(as N)* | | X | | | | | | | | | | | | |

CONTINUED FROM FRONT

#003

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE (if available) | | C. LONG TERM AVRG. VALUE (if available) | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANALYSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| G. Nitrogen Total Organic *(as N)* | | X | | | | | | | | | | | | |
| H. Oil and Grease | X | | <6 | | | | <5 | | 12 | mg/L | | | | |
| I. Phosphorus *(as P)* Total (7723-14-0) | | X | | | | | | | | | | | | |
| **J. RADIOACTIVITY** | | | | | | | | | | | | | | |
| (1) Alpha Total | | X | | | | | | | | | | | | |
| (2) Beta Total | | X | | | | | | | | | | | | |
| (3) Radium Total | | X | | | | | | | | | | | | |
| (4) Radium 226 Total | | X | | | | | | | | | | | | |
| K. Sulfate *(as $SO^4$)* (14808-79-8) | | X | | | | | | | | | | | | |
| L. Sulfide *(as S)* | | X | | | | | | | | | | | | |
| M. Sulfite *(as $SO^3$)* (14265-45-3) | | X | | | | | | | | | | | | |
| N. Surfactants | | X | | | | | | | | | | | | |
| O. Aluminum Total (7429-90-5) | | X | | | | | | | | | | | | |
| P. Barium Total (7440-39-3) | | X | | | | | | | | | | | | |
| Q. Boron Total (7440-42-8) | | X | | | | | | | | | | | | |
| R. Cobalt Total (7440-48-4) | | X | | | | | | | | | | | | |
| S. Iron total (7439-89-6) | | X | | | | | | | | | | | | |
| T. Magnesium Total (7439-95-4) | | X | | | | | | | | | | | | |
| U. Molybdenum Total (7439-98-7) | | X | | | | | | | | | | | | |
| V. Manganese Total (7439-96-5) | | X | | | | | | | | | | | | |
| W. Tin Total (7440-31-5) | | X | | | | | | | | | | | | |
| X. Titanium Total (7440-32-6) | | X | | | | | | | | | | | | |

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

A. & B. SEE INSTRUCTIONS BEFORE PROCEEDING – COMPLETE ONE TABLE FOR EACH OUTFALL – ANNOTATE THE OUTFALL NUMBER IN THE SPACE PROVIDED.
NOTE: TABLE 1 IS INCLUDED ON SEPARATE SHEETS NUMBERED FROM PAGE 6 TO PAGE 7.

C. USE THE SPACE BELOW TO LIST ANY OF THE POLLUTANTS LISTED IN PART B OF THE INSTRUCTIONS, WHICH YOU KNOW OR HAVE REASON TO BELIEVE IS DISCHARGED OR MAY BE DISCHARGED FROM ANY OUTFALL. FOR EVERY POLLUTANT YOU LIST, BRIEFLY DESCRIBE THE REASONS YOU BELIEVE IT TO BE PRESENT AND REPORT ANY ANALYTICAL DATA IN YOUR POSSESSION.

OF #004

| 1. POLLUTANT | 2. SOURCE | 1. POLLUTANT | 2. SOURCE |
|---|---|---|---|
| ZERO Discharge | | | |
| SANITARY Septage | | | |
| LAND Applied if | | | |
| Required | | | |
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3.10 BIOLOGICAL TOXICITY TESTING DATA

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

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

3.20 CONTRACT ANALYSIS INFORMATION

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

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

| A. NAME | B. ADDRESS | C. TELEPHONE *(area code and number)* | D. POLLUTANTS ANALYZED *(list)* |
|---|---|---|---|
| | | | |

3.30 CERTIFICATION

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

| NAME AND OFFICIAL TITLE (TYPE OR PRINT) | TELEPHONE NUMBER (AREA CODE AND NUMBER |
|---|---|
| Steve Burnett General MANAGER | 660-385-2789 |
| SIGNATURE (SEE INSTRUCTIONS) Steve Burnett | DATE SIGNED 6/28/10 |

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

**FORM C**
**TABLE 1 FOR 3.00 ITEM A AND B**

**INTAKE AND EFFLUENT CHARACTERISTICS** *(continued from page 3 of Form 2-C)* Zero Discharg

OUTFALL NO. 004

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

| 1. POLLUTANT | 2. EFFLUENT | | | | | | | 3. UNITS *(specify if blank)* | | 4. INTAKE *(optional)* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE *(if available)* | | C. LONG TERM AVRG. VALUE *(if available)* | | D. NO. OF ANAL-YSES | A. CONCEN-TRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANAL-YSES |
| | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| A. Biochemical Oxygen Demand *(BOD)* | | | | | | | | | | | | |
| B. Chemical Oxygen Demand *(COD)* | | | | | | | | | | | | |
| C. Total Organic Carbon *(TOC)* | | | | | | | | | | | | |
| D. Total Suspended Solids *(TSS)* | | | | | | | | | | | | |
| E. Ammonia *(as N)* | | | | | | | | | | | | |
| F. Flow | VALUE | | VALUE | | VALUE | | | | | VALUE | | |
| G. Temperature *(winter)* | VALUE | | VALUE | | VALUE | | | °C | | VALUE | | |
| H. Temperature *(summer)* | VALUE | | VALUE | | VALUE | | | °C | | VALUE | | |
| I. pH | MINIMUM | MAXIMUM | MINIMUM | MAXIMUM | | | | STANDARD UNITS | | | | |

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

| 1. POLLUTANT AND CAS NUMBER *(if available)* | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE *(optional)* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. BE-LIEVED PRE-SENT | B. BE-LIEVED AB-SENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE *(if available)* | | C. LONG TERM AVRG. VALUE *(if available)* | | D. NO. OF ANAL-YSES | A. CONCEN-TRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANAL-YSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| A. Bromide (24959-67-9) | | | | | | | | | | | | | | |
| B. Chlorine Total Residual | | | | | | | | | | | | | | |
| C. Color | | | | | | | | | | | | | | |
| D. Fecal Coliform | | | | | | | | | | | | | | |
| E. Fluoride (16984-48-8) | | | | | | | | | | | | | | |
| F. Nitrate–Nitrite *(as N)* | | | | | | | | | | | | | | |

**CONTINUED FROM FRONT**

| 1. POLLUTANT AND CAS NUMBER *(if available)* | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE *(optional)* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE *(if available)* | | C. LONG TERM AVRG. VALUE *(if available)* | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANALYSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| G. Nitrogen Total Organic *(as N)* | | | | | | | | | | | | | | |
| H. Oil and Grease | | | | | | | | | | | | | | |
| I. Phosphorus *(as P)* Total (7723-14-0) | | | | | | | | | | | | | | |
| **J. RADIOACTIVITY** | | | | | | | | | | | | | | |
| (1) Alpha Total | | | | | | | | | | | | | | |
| (2) Beta Total | | | | | | | | | | | | | | |
| (3) Radium Total | | | | | | | | | | | | | | |
| (4) Radium 226 Total | | | | | | | | | | | | | | |
| K. Sulfate *(as $SO^4$)* (14808-79-8) | | | | | | | | | | | | | | |
| L. Sulfide *(as S)* | | | | | | | | | | | | | | |
| M. Sulfite *(as $SO^3$)* (14265-45-3) | | | | | | | | | | | | | | |
| N. Surfactants | | | | | | | | | | | | | | |
| O. Aluminum Total (7429-90-5) | | | | | | | | | | | | | | |
| P. Barium Total (7440-39-3) | | | | | | | | | | | | | | |
| Q. Boron Total (7440-42-8) | | | | | | | | | | | | | | |
| R. Cobalt Total (7440-48-4) | | | | | | | | | | | | | | |
| S. Iron total (7439-89-6) | | | | | | | | | | | | | | |
| T. Magnesium Total (7439-95-4) | | | | | | | | | | | | | | |
| U. Molybdenum Total (7439-98-7) | | | | | | | | | | | | | | |
| V. Manganese Total (7439-96-5) | | | | | | | | | | | | | | |
| W. Tin Total (7440-31-5) | | | | | | | | | | | | | | |
| X. Titanium Total (7440-32-6) | | | | | | | | | | | | | | |

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

A. & B. SEE INSTRUCTIONS BEFORE PROCEEDING – COMPLETE ONE TABLE FOR EACH OUTFALL – ANNOTATE THE OUTFALL NUMBER IN THE SPACE PROVIDED.
NOTE: TABLE 1 IS INCLUDED ON SEPARATE SHEETS NUMBERED FROM PAGE 6 TO PAGE 7.

C. USE THE SPACE BELOW TO LIST ANY OF THE POLLUTANTS LISTED IN PART B OF THE INSTRUCTIONS, WHICH YOU KNOW OR HAVE REASON TO BELIEVE IS DISCHARGED OR MAY BE DISCHARGED FROM ANY OUTFALL. FOR EVERY POLLUTANT YOU LIST, BRIEFLY DESCRIBE THE REASONS YOU BELIEVE IT TO BE PRESENT AND REPORT ANY ANALYTICAL DATA IN YOUR POSSESSION.

Of# 005

| 1. POLLUTANT | 2. SOURCE | 1. POLLUTANT | 2. SOURCE |
|---|---|---|---|
| None | | | |
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3.10 BIOLOGICAL TOXICITY TESTING DATA

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

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

3.20 CONTRACT ANALYSIS INFORMATION

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

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

| A. NAME | B. ADDRESS | C. TELEPHONE *(area code and number)* | D. POLLUTANTS ANALYZED *(list)* |
|---|---|---|---|
| Inovatia Labs | 120 E. Davis St<br>Fayette, Mo 65248 | 660-248-1911 | BOD, TSS<br>PH, O+G |

3.30 CERTIFICATION

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

| NAME AND OFFICIAL TITLE (TYPE OR PRINT) | TELEPHONE NUMBER (AREA CODE AND NUMBER |
|---|---|
| Steve Burnett General MANAGER | 660-385-2789 |
| SIGNATURE (SEE INSTRUCTIONS)<br>Steve Burnett | DATE SIGNED<br>6/28/12 |

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

**FORM C**
**TABLE 1 FOR 3.00 ITEM A AND B**

**INTAKE AND EFFLUENT CHARACTERISTICS** *(continued from page 3 of Form 2-C)* Historical data 2011

OUTFALL NO. 005

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

| 1. POLLUTANT | 2. EFFLUENT | | | | | | | 3. UNITS *(specify if blank)* | | 4. INTAKE *(optional)* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE *(if available)* | | C. LONG TERM AVRG. VALUE *(if available)* | | D. NO. OF ANAL-YSES | A. CONCEN-TRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANAL-YSES |
| | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| A. Biochemical Oxygen Demand *(BOD)* | 20 | | | | 15.25 | | 4 | mg/L | pounds | | | |
| B. Chemical Oxygen Demand *(COD)* | | | | | | | | | | | | |
| C. Total Organic Carbon *(TOC)* | | | | | | | | | | | | |
| D. Total Suspended Solids *(TSS)* | 52 | | | | 27.75 | | 4 | | | | | |
| E. Ammonia *(as N)* | | | | | | | | | | | | |
| F. Flow | VALUE 375,000 gpd | | VALUE | | VALUE | | | | | VALUE | | |
| G. Temperature *(winter)* | VALUE 1C | | VALUE | | VALUE | | | °C | | VALUE | | |
| H. Temperature *(summer)* | VALUE 38C | | VALUE | | VALUE | | | °C | | VALUE | | |
| I. pH | MINIMUM 6.0 | MAXIMUM 9.0 | MINIMUM | MAXIMUM | | | | STANDARD UNITS | | | | |

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

| 1. POLLUTANT AND CAS NUMBER *(if available)* | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE *(optional)* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. BE-LIEVED PRE-SENT | B. BE-LIEVED AB-SENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE *(if available)* | | C. LONG TERM AVRG. VALUE *(if available)* | | D. NO. OF ANAL-YSES | A. CONCEN-TRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANAL-YSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| A. Bromide (24959-67-9) | | X | | | | | | | | | | | | |
| B. Chlorine Total Residual | | X | | | | | | | | | | | | |
| C. Color | | X | | | | | | | | | | | | |
| D. Fecal Coliform | | X | | | | | | | | | | | | |
| E. Fluoride (16984-48-8) | | X | | | | | | | | | | | | |
| F. Nitrate–Nitrite *(as N)* | | X | | | | | | | | | | | | |

CONTINUED FROM FRONT

OF #005

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE (if available) | | C. LONG TERM AVRG. VALUE (if available) | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANALYSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| G. Nitrogen Total Organic *(as N)* | | X | | | | | | | | | | | | |
| H. Oil and Grease | X | | 8 | | | | 5.75 | | 4 | mg/L | | | | |
| I. Phosphorus *(as P)* Total (7723-14-0) | | X | | | | | | | | | | | | |
| **J. RADIOACTIVITY** | | | | | | | | | | | | | | |
| (1) Alpha Total | | X | | | | | | | | | | | | |
| (2) Beta Total | | X | | | | | | | | | | | | |
| (3) Radium Total | | X | | | | | | | | | | | | |
| (4) Radium 226 Total | | X | | | | | | | | | | | | |
| K. Sulfate *(as $SO^4$)* (14808-79-8) | | X | | | | | | | | | | | | |
| L. Sulfide *(as S)* | | X | | | | | | | | | | | | |
| M. Sulfite *(as $SO^3$)* (14265-45-3) | | X | | | | | | | | | | | | |
| N. Surfactants | | X | | | | | | | | | | | | |
| O. Aluminum Total (7429-90-5) | | X | | | | | | | | | | | | |
| P. Barium Total (7440-39-3) | | X | | | | | | | | | | | | |
| Q. Boron Total (7440-42-8) | | X | | | | | | | | | | | | |
| R. Cobalt Total (7440-48-4) | | X | | | | | | | | | | | | |
| S. Iron total (7439-89-6) | | X | | | | | | | | | | | | |
| T. Magnesium Total (7439-95-4) | | X | | | | | | | | | | | | |
| U. Molybdenum Total (7439-98-7) | | X | | | | | | | | | | | | |
| V. Manganese Total (7439-96-5) | | X | | | | | | | | | | | | |
| W. Tin Total (7440-31-5) | | X | | | | | | | | | | | | |
| X. Titanium Total (7440-32-6) | | X | | | | | | | | | | | | |

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

A. & B. SEE INSTRUCTIONS BEFORE PROCEEDING – COMPLETE ONE TABLE FOR EACH OUTFALL – ANNOTATE THE OUTFALL NUMBER IN THE SPACE PROVIDED.
NOTE: TABLE 1 IS INCLUDED ON SEPARATE SHEETS NUMBERED FROM PAGE 6 TO PAGE 7.

C. USE THE SPACE BELOW TO LIST ANY OF THE POLLUTANTS LISTED IN PART B OF THE INSTRUCTIONS, WHICH YOU KNOW OR HAVE REASON TO BELIEVE IS DISCHARGED OR MAY BE DISCHARGED FROM ANY OUTFALL. FOR EVERY POLLUTANT YOU LIST, BRIEFLY DESCRIBE THE REASONS YOU BELIEVE IT TO BE PRESENT AND REPORT ANY ANALYTICAL DATA IN YOUR POSSESSION.

OF #006

| 1. POLLUTANT | 2. SOURCE | 1. POLLUTANT | 2. SOURCE |
|---|---|---|---|
| None | | | |
| | | | |
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3.10 BIOLOGICAL TOXICITY TESTING DATA

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

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

3.20 CONTRACT ANALYSIS INFORMATION

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

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

| A. NAME | B. ADDRESS | C. TELEPHONE *(area code and number)* | D. POLLUTANTS ANALYZED *(list)* |
|---|---|---|---|
| Inovatia Labs | 120 E. Davis St<br>Fayette, Mo 65248 | 660-248-1911 | BOD, TSS, O&G, PH |

3.30 CERTIFICATION

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

| NAME AND OFFICIAL TITLE (TYPE OR PRINT) | TELEPHONE NUMBER (AREA CODE AND NUMBER |
|---|---|
| Steve Burnett General MANAGER | 660-385-2789 |
| SIGNATURE (SEE INSTRUCTIONS)<br>Steve Burnett | DATE SIGNED<br>6/28/12 |

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

**FORM C**
**TABLE 1 FOR 3.00 ITEM A AND B**

**INTAKE AND EFFLUENT CHARACTERISTICS** *(continued from page 3 of Form 2-C)* Historial DATA 2011

OUTFALL NO. 006

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

| 1. POLLUTANT | 2. EFFLUENT | | | | | | | 3. UNITS *(specify if blank)* | | 4. INTAKE *(optional)* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE *(if available)* | | C. LONG TERM AVRG. VALUE *(if available)* | | D. NO. OF ANAL-YSES | A. CONCEN-TRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANAL-YSES |
| | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| A. Biochemical Oxygen Demand *(BOD)* | 20 | | | | 15 | | 4 | mg/L | pds | | | |
| B. Chemical Oxygen Demand *(COD)* | | | | | | | | | | | | |
| C. Total Organic Carbon *(TOC)* | | | | | | | | | | | | |
| D. Total Suspended Solids *(TSS)* | 52 | | | | 28 | | 4 | mg/L | pds | | | |
| E. Ammonia *(as N)* | | | | | | | | | | | | |
| F. Flow | VALUE 2.3M gpd | | VALUE | | VALUE | | | | | VALUE | | |
| G. Temperature *(winter)* | VALUE 1C | | VALUE | | VALUE | | | °C | | VALUE | | |
| H. Temperature *(summer)* | VALUE 38C | | VALUE | | VALUE | | | °C | | VALUE | | |
| I. pH | MINIMUM 6.0 | MAXIMUM 9.0 | MINIMUM | MAXIMUM | | | | STANDARD UNITS | | | | |

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

| 1. POLLUTANT AND CAS NUMBER *(if available)* | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE *(optional)* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. BE-LIEVED PRE-SENT | B. BE-LIEVED AB-SENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE *(if available)* | | C. LONG TERM AVRG. VALUE *(if available)* | | D. NO. OF ANAL-YSES | A. CONCEN-TRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANAL-YSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| A. Bromide (24959-67-9) | | X | | | | | | | | | | | | |
| B. Chlorine Total Residual | | X | | | | | | | | | | | | |
| C. Color | | X | | | | | | | | | | | | |
| D. Fecal Coliform | | X | | | | | | | | | | | | |
| E. Fluoride (16984-48-8) | | X | | | | | | | | | | | | |
| F. Nitrate–Nitrite *(as N)* | | X | | | | | | | | | | | | |

CONTINUED FROM FRONT

OF #006

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE (if available) | | C. LONG TERM AVRG. VALUE (if available) | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANALYSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| G. Nitrogen Total Organic *(as N)* | | X | | | | | | | | | | | | |
| H. Oil and Grease | X | | 8 | | | | 6 | | 4 | mg/L | | | | |
| I. Phosphorus *(as P)* Total (7723-14-0) | | X | | | | | | | | | | | | |
| **J. RADIOACTIVITY** | | | | | | | | | | | | | | |
| (1) Alpha Total | | X | | | | | | | | | | | | |
| (2) Beta Total | | X | | | | | | | | | | | | |
| (3) Radium Total | | X | | | | | | | | | | | | |
| (4) Radium 226 Total | | X | | | | | | | | | | | | |
| K. Sulfate *(as $SO^4$)* (14808-79-8) | | X | | | | | | | | | | | | |
| L. Sulfide *(as S)* | | X | | | | | | | | | | | | |
| M. Sulfite *(as $SO^3$)* (14265-45-3) | | X | | | | | | | | | | | | |
| N. Surfactants | | X | | | | | | | | | | | | |
| O. Aluminum Total (7429-90-5) | | X | | | | | | | | | | | | |
| P. Barium Total (7440-39-3) | | X | | | | | | | | | | | | |
| Q. Boron Total (7440-42-8) | | X | | | | | | | | | | | | |
| R. Cobalt Total (7440-48-4) | | X | | | | | | | | | | | | |
| S. Iron total (7439-89-6) | | X | | | | | | | | | | | | |
| T. Magnesium Total (7439-95-4) | | X | | | | | | | | | | | | |
| U. Molybdenum Total (7439-98-7) | | X | | | | | | | | | | | | |
| V. Manganese Total (7439-96-5) | | X | | | | | | | | | | | | |
| W. Tin Total (7440-31-5) | | X | | | | | | | | | | | | |
| X. Titanium Total (7440-32-6) | | X | | | | | | | | | | | | |

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
(SEE MAP FOR APPROPRIATE REGIONAL OFFICE)

# FORM I – PERMIT APPLICATION FOR CONSTRUCTION AND OPERATION OF WASTEWATER IRRIGATION SYSTEMS

| FOR AGENCY USE ONLY |
|---|
| PERMIT NUMBER MO - |
| DATE RECEIVED |

**INSTRUCTIONS: The following forms must be submitted with Form I: FORM B** for domestic wastewater. **Submit FORMS E and G** for land disturbance permit if construction areas total one acre or more.

## 1.00 FACILITY INFORMATION

1.10 Facility Name POET Biorefining - MACON

1.20 Application for:
- ☐ Construction Permit (attach Engineering report, Plans and Specifications per 10 CSR 20-8)
- ☐ Operating Permit (if no construction permit, attach engineering documents)
  Date Irrigation System Began Operation: _____
- ☒ Operating Permit Renewal

1.30 Type of wastewater to be irrigated: ☒ Domestic ☐ Municipal ☐ State/National Park ☐ Seasonal business
☐ Municipal with Pretreatment Program or Significant Industrial Users ☐ Other (explain) _____
SIC Codes (list all that apply, in order of importance) _____

1.40 Months when the business or enterprise will operate or generate wastewater:
☒ 12 months per year ☐ Part of year (list Months): _____

1.50 This system is designed for:
☒ No-discharge ☐ Partial irrigation when feasible and discharge rest of time.
☐ Irrigation during recreation season (April – October) and discharge during November – March.
☒ Other (explain) IRRIGATION AS NEEDED

1.60 List the Facility outfalls which will be applicable to the irrigation system from outfalls listed on Form B.
Outfall Nos. 004 _ _ _ _ _ _

## 2.00 STORAGE BASINS

2.10 Number of storage basins: 1 Type of basin: ☐ Steel ☐ Concrete ☐ Fiberglass ☒ Earthen
☐ Earthen with membrane liner

2.20 Storage basin dimensions at inside top of berm (feet): Report freeboard as feet from top of berm to emergency spillway or overflow pipe.
(Complete Attachment A: Profile Sketch)

| | Length | Width | Depth | Freeboard | Berm Width | % Slope |
|---|---|---|---|---|---|---|
| Basin #1: | 112 | 96 | 10 | 2 | 1 | |
| Basin #2: | | | | | | |

2.30 Storage Basin operating levels (report as feet below emergency overflow level)
Basin #1: Maximum water level 1 ft. Minimum operating water level 7 ft.
Basin #2: Maximum water level _____ ft. Minimum operating water level _____ ft.

2.40 Depth of sludge in lagoons and storage basins <1 ft. septic tank pretreatment
Total sludge stored _____ dry tons _____ cu. ft.

## 3.00 LAND APPLICATION SYSTEM

3.10 Number of irrigation sites 1 Total Acres 11 Maximum % field slopes 10
Location: SW ¼, NW ¼, NW ¼, 17 Sec. 57 T 13 R MACON County ___ Acres
Location: ___ ¼, ___ ¼, ___ ¼, ___ Sec. ___ T ___ R _____ County ___ Acres

3.11 Type of vegetation: ☒ Grass hay ☐ Pasture ☐ Timber ☐ Row crops ☐ Other (describe) _____

3.20 Wastewater flow (dry weather) gallons/day:
Average annual: 208,050 Seasonal _____ Off-season _____
Months of seasonal flow: 12
Human Population Equivalent: _____

3.21 Land Application rate per acre (design flow including 1 in 10 year storm water flows):
Design: ____ inches/year 0.2 inches/hour ____ inches/day ____ inches/week
Actual: ____ inches/year 0.2 inches/hour ____ inches/day ____ inches/week
Total Irrigation per year (gallons): 560,620 Design _____ Actual
Actual months used for Irrigation (check): ☒ Jan ☒ Feb ☒ Mar ☒ Apr ☒ May ☒ Jun ☒ Jul ☒ Aug ☒ Sep ☒ Oct ☒ Nov ☒ Dec

3.22 Land Application Rate is based on:
☐ Nutrient Management Plan (N&P)
☒ Hydraulic Loading
☐ Other (describe) _____

3.30 Equipment type: ☒ Sprinklers ☐ Gated pipe ☐ Center pivot ☐ Traveling gun ☐ Other (describe) _____
Equipment Flow Capacity: 35 Gallons per hour 120 Total hours of operation per year

3.40 Public Access Restrictions for irrigation sites: ☐ Site is Fenced ☐ Wastewater disinfection prior to irrigation
☒ Other (describe): Application AREA Located Where ACCESS is Limited, Security CAMERA'S

3.50 Separation distance (in feet) from the outside edge of the wetted irrigation area to down gradient features:
N/A Permanent flowing stream N/A Losing Stream 100 Intermittent (wet weather) stream 150 Lake or pond
50 Property boundary 1300 Dwellings N/A Water supply well ____ Other (describe) _____

3.60 SOILS INFORMATION: Use information from the County Soil Survey, NRCS, or professional soil scientist.
Soil Series Name Gorin Silt Loam Depth of bedrock 760 Feet Depth of water table 2-4 Feet
Soil Infiltration rate in inches/hour (in/hr) for most restrictive layer within the following soil depth ranges:
0.06- 0.2 In/hr for 0-12 in soil depth 0.2-06 In/hr for 12-24 inch soil depth 0.2-06 In/hr for 24-60 inch soil depth

3.70 Include a recent Geologic Report by the Department's Geological Survey and Resource Assessment Division with your construction permit.

3.80 Attach a current copy of the Operation and Maintenance (O&M) Plan for the irrigation system. Date of O&M Plan: 01-30-06

3.81 Attach a site map showing topography, storage basins, irrigation sites, property boundary, streams, wells, roads, dwellings and other pertinent features.

3.82 Attach a facility sketch showing treatment units, storage basins, pipelines, irrigation equipment, application sites and other features.

**4.00 CERTIFICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine or imprisonment.

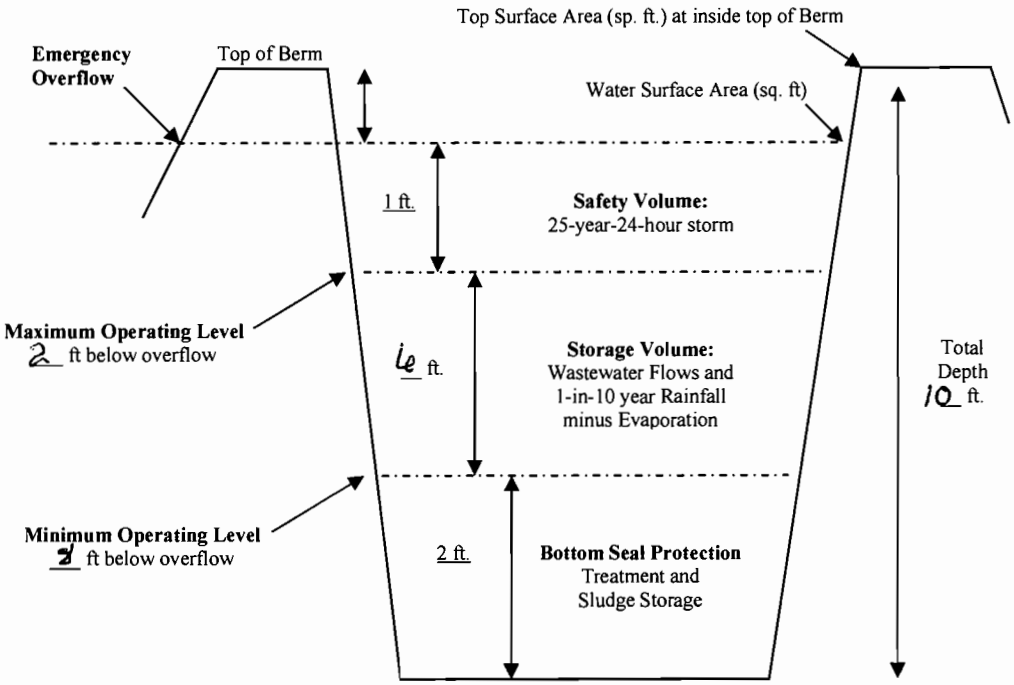
| **CONSULTING ENGINEER** – Name, Official Title and Engineering Firm (TYPE OR PRINT) | TELEPHONE NUMBER (area code and number) |
|---|---|
| SIGNATURE | DATE SIGNED |
| **OWNER OR AUTHORIZED REPRESENTATIVE** – Name and Official Title (TYPE OR PRINT)<br>Steve Burnett General Manager | TELEPHONE NUMBER (area code and number)<br>660-385-2789 |
| SIGNATURE<br>Steve Burnett | DATE SIGNED<br>6-20-12 |

**ATTACHMENT A**

(To be included with Form I)

**Lagoon or Storage Basin**

**PROFILE SKETCH**




**DEFINITION OF TERMS** (REFER TO THE PROFILE SKETCH ABOVE).

a. Freeboard is depth from top of berm to emergency spillway (minimum 1 foot);

b. Safety Volume is depth for 25-year, 24-hour storm (minimum of 1 foot);

c. Maximum Operating Level is at bottom of the safety volume (minimum of 2 feet below top of berm).

d. Minimum Operating Level is 2 feet above bottom of lagoon for seal protection per 10 CSR 20-8.
The minimum operating level may be greater than 2 feet when additional treatment volume is included.

e. Storage Volume and days storage are based on the volume between Minimum and Maximum Operating Levels.

f. Total Depth is from top of berm to bottom of basin including freeboard.

JKU

ID #: 291-99

WASTE WATER TREATMENT SITE - GEOLOGIC EVALUATION
MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY
P.O. BOX 250, ROLLA, MISSOURI 65402 (573)368-2161

1. Project: N.E. Missouri Grain Processors County: Macon

2. Location: SW1/4, NW1/4, NW1/4, Sec 17, T57N, R13W, Quad: Macon

3. Latitude: 39 Deg, 44 Min, 50 Sec Longitude: 92 Deg, 23 Min, 0 Sec

4. Owner: Dale Whitley, Northeast MO Grain Processors, 218 N. Rollins, Suite 101A, Macon, MO 63552; 660-385-5627

5. Requested by: Brandon Viers, Shafer, Kline & Warren, Inc., 215 North Rollins, Macon, Mo 63552; 660-385-6441

6. Previous Reports: Not Applicable: ___

| | | | | |
|---|---|---|---|---|
| ID # 222-99 | ID # - | ID # - | ID # - | ID # - |
| Date 03/08/99 | Date / / | Date / / | Date / / | Date / / |

7. A) Were plans submitted? Yes B) Was site investigated by S.C.S.? No

8. Facility Type: Mechanical Plant ___, Land Application ___, Marsh System ___, Earthen Holding Basin ___, Earthen Lagoon with Discharge X, Other ___.

9. Waste Type: Animal ___, Human X, Process/Industrial X, Leachate ___, Other ___. Funding Source: Construction Grant ___, IWTX, WWL ___

GENERAL GEOLOGY

10. Date of Field Visit: / /

11. Overall Geologic Limitations: Slight X, Moderate ___, Severe ___.

12. Topography: 0-4% X, 4-8% X, 8-15% ___, Greater than 15% ___.
On: Broad Upland ___, Ridgetop ___, Hillslope X, Narrow Ravine ___, Floodplain ___, Alluvial Plain ___, Terrace ___, Sinkhole ___.

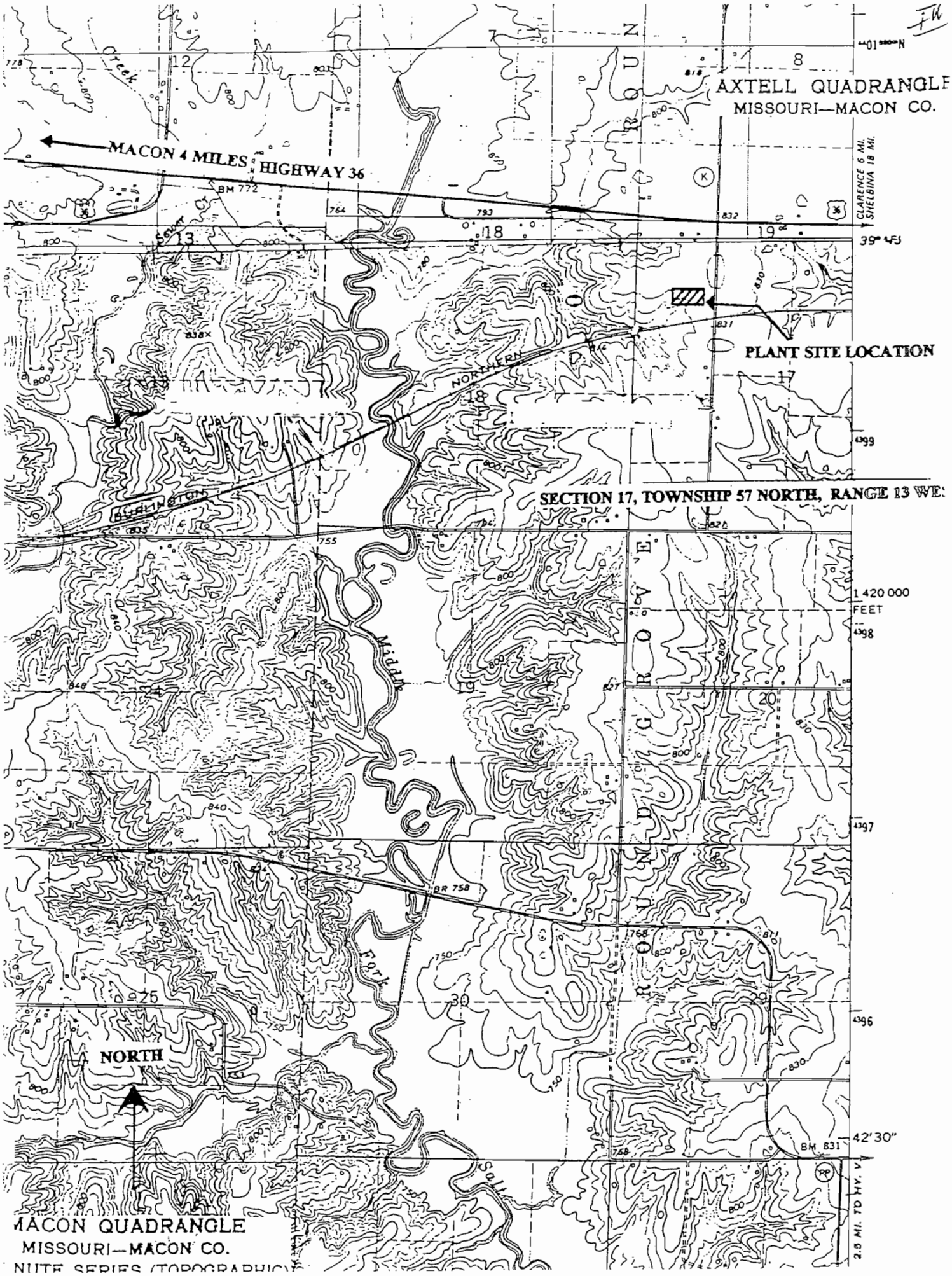
13. Bedrock: Not applicable.

14. Overburden (Soil): There is greater than 30 feet of glacial till (CL-CH). The soil has low permeability.

15. Receiving Stream Classification: Gaining X, Losing ___, Not Applicable (No Discharge) ___.

16. Collapse Potential: Not Applicable ___, Slight X, Moderate___, Severe ___

17. Recommended Construction Procedures: Installation of Clay Pad X, Compaction X, Artificial Sealing ___, Diversion of Subsurface Flow ___, Rock Excavation ___, Limit Excavation Depth ___.


AXTELL QUADRANGLE
MISSOURI—MACON CO.
MACON 4 MILES HIGHWAY 36
PLANT SITE LOCATION
SECTION 17, TOWNSHIP 57 NORTH, RANGE 13 WE
NORTHERN
BURLINGTON
Middle
Fork
Salt
NORTH
1 420 000 FEET
42'30"
MACON QUADRANGLE
MISSOURI—MACON CO.

# Operation and Maintenance

# Sanitary Lagoon Septage Land Application

**Overview**: Lagoon septage is land applied via a pto driven pump through sectional irrigation piping. Piping is strung through the land application area and a rate of 0.5 "/day is applied.

## Operation

Initial application checklist:

1. Check that application area is not frozen, snow covered or under saturated conditions.
2. No rainfall or forecasted rainfall greater than a 40% chance.
3. Vegetation groundcover exists.
4. Application takes place only during daylight hours.
5. Record freeboard.

Initial equipment checklist:

1. Check pump oil level. Refill or change as required.
2. Check that all guards are in place.
3. Verify that valves and check valves are "free" and operational.
4. Check all gasketing and seals are in pump connections and piping. Verify all joint seals are in place in pump, hose and pipe sections.
5. Lay out piping in designated application area. Ensure all steams are in the vertical position. Traverse area completely with piping.

Connect Rovatti Pompe T1-50E pump to tractor. Transport to west edge of sanitary lagoon along with necessary hoses. Once located in pumping position, connect pickup hose, discharge connecting hose and pto shaft. Ensure that pickup hose is located at least one foot below the surface and at least two feet from the bottom of the lagoon. Begin by priming the pump with the hand primer. Once primed, start pto. As line pressurizes, make a visual inspection of line to ensure pressurization and that no blowouts occur. If sprinkler head blockage occurs, remove pressure and clear blockage at head. Ensure that all heads are in operation and rotating normally.

Continue to run pump until 0.5"/day have been applied. This typically takes 6-8 hrs. Verify application rate with rain gauge. Visual inspect the whole operation at least once an hour. Make repairs as necessary and notify proper personnel of application hours. Continue operation until only four ft of septage remain in lagoon. Record final freeboard for reporting purposes.

## Maintenance

Every use:

1. All lubricant levels checked, pump and tractor.
2. Fuel level checked.
3. Hoses and piping are sound and leak free.
4. Ensure all seals are in place on pump, hoses and piping.
5. Valves are operational.
6. Plugs have appropriate seals.

Annually:

1. Piping has no integrity leaks. If any are located, remove from service or repair as necessary e.g. by welding or coupling.
2. Verify condition of sprinkler heads. Ensure spring integrity and heads are complete. Remove any that are questionable and repair or replace.

Annual storage:

1. Pick up sectional pipe to prevent plugging and incidental "run-overs"
2. Roll up hose and store in a clean dry area. Keep out of sunlight.
3. Store pump in storage area and winterize if necessary.

# INVOICE

## MISSOURI DEPARTMENT OF NATURAL RESOURCES
### Division Of Environmental Quality / Water Protection Program

Jefferson City, MO 65102

Contact: BUDGET & FEES UNIT
Phone: 573-751-1300
Fax: 573-526-1146

Bill To: POET BIOREFINING-MACON
30211 MAJOR AVENUE
MACON, MO 63552

Invoice #: 34601207198
Permit #: MO0124575
Date: 03/07/2012
Date Due: 05/31/2012

**ANNUAL NOTICE**

| Description | Unit | Quantity | Amount | Total |
|---|---|---|---|---|
| POET BIOREFINING-MACON *<br>FOR FEE DATE OF: 5 /2012<br>CURRENT INVOICE # 34601207198 | PERMIT | 1.00 | $1,500.00 | $1,500.00 |
| **STATE OPERATING PERMIT UNDER THE MISSOURI CLEAN WATER LAW, SECTION 644.052.5.* | | | **Current Balance Due** | $1,500.00 |
| | | | **Past Balance Due** | $0.00 |
| | | | **Less Payments Received** | $0.00 |
| | | | **Plus Late Penalties** | $0.00 |
| | | | **Total Due** | $1,500.00 |

MAR 12 2012

**POET** Biorefining Macon 30211 Major Avenue. Macon, MO 63552 · (660) 385-2789

82461

| Vendor ID | Name | Account with Vendor | Check Date | Document Number |
|---|---|---|---|---|
| 18363 | MISSOURI DEPARTMENT OF NATL | | 4/17/2012 | 82461 |

| Our Voucher Number | Date | Amount | Amount Paid | Discount | Net Amount Paid |
|---|---|---|---|---|---|
| 2012-34601207198 | 4/17/2012 | $1,500.00 | $1,500.00 | $0.00 | $1,500.00 |

$1,500.00 $1,500.00 $0.00 $1,500.00

STATE OF MISSOURI Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

March 7, 2012

Dear Missouri State Operating Permit Holder:

The Missouri Department of Natural Resources has been authorized to collect the Water Pollution Control Fee through passage of House Bill 89 signed by the Governor on July 11, 2011. The fee portion of the bill became effective upon the Governor's signature. This statutory authority applies to the collection of wastewater permit fees for operating permits, construction permits, water quality certifications, permit variances and permit modifications.

An invoice has been sent to your facility for your annual operating permit fee. We are also notifying you with this letter since this authority was re-established into law. Please note that if your facility has an outstanding balance of any earlier unpaid fees, we will continue collection efforts for those outstanding fees.

If you have any questions, please contact the Water Protection Program's Budget and Fees Unit at 573-751-1300, or via email at sherry.bell@dnr.mo.gov .

Thank you for your continued support of the Department.

Sincerely,

John Madras
Director

WATER PROTECTION PROGRAM

Recycled Paper