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-0001881
Owner: The Doe Run Resources Corporation d/b/a The Doe Run Company
Address: P.O. Box 500, Viburnum MO 65566
Continuing Authority: same as above
Address: same as above
Facility Name: Doe Run Company – Sweetwater Mine/Mill Site
Facility Address: 1382 Sweetwater Mine Road, Ellington MO 63638
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.: Headwaters Logan Creek (11010007-0401)

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

FACILITY DESCRIPTION

This facility is involved in the mining and milling of ore. SIC # 1031; NAICS 212231. See page two. Outfall #002 is the main wastewater outfall for this facility. No certified operator required.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Sections 640.013, 621.250, and 644.051.6 of the Law.

February 1, 2021
Effective Date
Edward B. Galbraith, Director, Division of Environmental Quality

September 30, 2024
Expiration Date
Chris Wieberg, Director, Water Protection Program
FACILITY DESCRIPTION (CONTINUED)

**PERMITTED FEATURE #001** – Domestic wastewater – SIC #1031; septic tanks, subsurface drip irrigation, no surface discharge; surface discharge from this permitted feature is not authorized, and shall be reported in accordance with special and standard conditions.
Legal Description: NW¼, SE¾, Sec.22, T31N, R2W, Reynolds County
UTM Coordinates: X = 664251, Y = 4136485

**OUTFALL #002** – Process Wastewater – SIC #1031; Mine dewatering and process wastewater from milling of lead, zinc, and copper bearing ores, tailings dam toe drain discharge, industrial sludge, truck wash water, laundry wash water, stormwater runoff from the facility and surrounding watershed that collects in Sweetwater Tailings Impoundment (No. 51 Lake or tailings impoundment) and undergoes treatment via settling. Mine water and process wastewater is pumped up to the top of the tailings impoundment (No. 51 Lake) and undergoes treatment via settling. Stormwater is also pumped to the top of the tailings impoundment to achieve treatment via settling. A water treatment plant that became operational January 2017 treats process wastewater and stormwater from the tailings impoundment, as needed, by pH adjustment, coagulation, metals chemical precipitation, flocculation, clarification, and settling.
Legal Description: NE ¼, SW ¾, Sec. 23, T31N, R2W, Reynolds County
UTM Coordinates: X = 665406, Y = 4136720
Receiving Stream: Adair Creek (C)
First Classified Stream and ID: 08-20-13 MUDD V1.0 (C) WBID # 3960; locally known as Adair Creek
USGS Basin & Sub-watershed No.: Headwaters Logan Creek (11010007-0401)
Max Flow: Dependent on Precipitation
Design Flow: 14.4 MGD
Average Flow: 10.8 MGD

**OUTFALL #015** – Industrial stormwater only at mining & milling facility – SIC #1031
Stormwater retention basin. Under normal operations, the water in the retention basin is pumped back to the tailings impoundment with ultimate discharge through outfall #002. Discharge permissible only under circumstances listed in special condition #15.
Legal Description: SE ¼, SW ¼, Sec. 22, T31N, R2W, Reynolds County
UTM Coordinates: X = 663889, Y = 4136127
Receiving Stream: Tributary to Sweetwater Creek (C)
First Classified Stream and ID: 08-20-13 MUDD V1.0 (C) WBID # 3960; Locally known as Sweetwater Creek
USGS Basin & Sub-watershed No.: Headwaters Logan Creek (11010007-0401)
Design Flow: 0 MGD
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

<table>
<thead>
<tr>
<th>OUTFALL #002</th>
<th>TABLE A-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>process wastewater</td>
<td>INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</td>
</tr>
</tbody>
</table>

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. In accordance with 10 CSR 20-7.031, the final effluent limitations outlined in Table A-2 must be achieved as soon as possible but no later than **February 1, 2024**. These interim effluent limitations are effective beginning **February 1, 2021** and remain in effect through **January 31, 2024** or as soon as possible. Such discharges shall be controlled, limited, and monitored by the permittee as specified below:

<table>
<thead>
<tr>
<th>LIMIT SET: M</th>
</tr>
</thead>
</table>

**PHYSICAL**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Interim Limitations</th>
<th>Monitoring Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow</td>
<td>MGD</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>pH ‡</td>
<td>SU</td>
<td>6.5 to 9.0</td>
<td>6.5 to 9.0</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>mg/L</td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>

**METALS**

<table>
<thead>
<tr>
<th>Metal</th>
<th>Units</th>
<th>Interim Limitations</th>
<th>Monitoring Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium, Total Recoverable</td>
<td>µg/L</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Copper, Total Recoverable</td>
<td>µg/L</td>
<td>34.3</td>
<td>21.1</td>
</tr>
<tr>
<td>Lead, Total Recoverable</td>
<td>µg/L</td>
<td>28.0</td>
<td>13.9</td>
</tr>
<tr>
<td>Zinc, Total Recoverable</td>
<td>µg/L</td>
<td>272.0</td>
<td>128.5</td>
</tr>
</tbody>
</table>

**LIMIT SET: Q**

**CONVENTIONAL**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Interim Limitations</th>
<th>Monitoring Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyanide Amenable to Chlorination ‡</td>
<td>µg/L</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

**METALS**

<table>
<thead>
<tr>
<th>Metal</th>
<th>Units</th>
<th>Interim Limitations</th>
<th>Monitoring Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron, Total Recoverable</td>
<td>µg/L</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Toxicity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Whole Effluent Toxicity, Chronic**

See Special Condition #1

| TUc | 1.6 | - | once/quarter † grab |

**LIMIT SET: A**

**METALS**

<table>
<thead>
<tr>
<th>Metal</th>
<th>Units</th>
<th>Interim Limitations</th>
<th>Monitoring Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury, Total</td>
<td>µg/L</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**LIMIT REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2021. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**

**LIMIT REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2021. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**

**LIMIT REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2022. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

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 **February 1, 2024** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited, and monitored by the permittee as specified below:

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETERS</th>
<th>UNITS</th>
<th>FINAL EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM</td>
<td>WEEKLY AVERAGE</td>
</tr>
<tr>
<td><strong>LIMIT SET: M</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PHYSICAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow</td>
<td>MGD</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><strong>CONVENTIONAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH †</td>
<td>SU</td>
<td>6.5 to 9.0</td>
<td>6.5 to 9.0</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>mg/L</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td><strong>METALS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium, Total Recoverable</td>
<td>µg/L</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Copper, Total Recoverable</td>
<td>µg/L</td>
<td>34.3</td>
<td>21.1</td>
</tr>
<tr>
<td>Lead, Total Recoverable</td>
<td>µg/L</td>
<td>11.2</td>
<td>4.7</td>
</tr>
<tr>
<td>Zinc, Total Recoverable</td>
<td>µg/L</td>
<td>272.0</td>
<td>128.5</td>
</tr>
</tbody>
</table>

**MONITORING REPORTS SHALL BE SUBMITTED MONTHLY: THE FIRST REPORT IS DUE MARCH 28, 2024. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**

| **LIMIT SET: Q**    |       |               |               |               |                         |            |
| CONVENTIONAL        |       |               |               |               |                         |            |
| Cyanide Amenable to Chlorination ‡ | µg/L | *            | *             |               | once/quarter ◊          | grab       |
| **METALS**          |       |               |               |               |                         |            |
| Iron, Total Recoverable | µg/L | *            | *             |               | once/quarter ◊          | grab       |
| **TOXICITY**        |       |               |               |               |                         |            |
| Whole Effluent Toxicity, Chronic See Special Condition #1 | TUc | 1.6         | -             |               | once/quarter ◊          | grab       |

**MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY: THE FIRST REPORT IS DUE APRIL 28, 2024. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**

| **LIMIT SET: A**    |       |               |               |               |                         |            |
| METALS              |       |               |               |               |                         |            |
| Mercury, Total      | µg/L  | 2            | 1             |               | once/year               | grab       |

**MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY: THE FIRST REPORT IS DUE JANUARY 28, 2025. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

**PERMITTED FEATURE #001**

**influent monitoring**

**TABLE A-3**

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee shall monitor the influent to the sub-surface domestic system as specified below:

<table>
<thead>
<tr>
<th>MONITORING PARAMETERS</th>
<th>UNITS</th>
<th>FINAL EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM</td>
<td>MONTHLY AVERAGE</td>
</tr>
<tr>
<td>METALS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium, Total Recoverable</td>
<td>µg/L</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Copper, Total Recoverable</td>
<td>µg/L</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Lead, Total Recoverable</td>
<td>µg/L</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Zinc, Total Recoverable</td>
<td>µg/L</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

**MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2021.**

**OUTFALL #015**

**stormwater basin**

**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 **February 1, 2021** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited, and monitored by the permittee as specified below:

<table>
<thead>
<tr>
<th>MONITORING PARAMETERS</th>
<th>UNITS</th>
<th>FINAL EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM</td>
<td>MONTHLY AVERAGE</td>
</tr>
<tr>
<td>PHYSICAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Precipitation</td>
<td>inches</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td>CONVENTIONAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH †</td>
<td>SU</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>mg/L</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td>METALS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium, Total Recoverable</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td>Copper, Total Recoverable</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td>Lead, Total Recoverable</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td>Mercury, Total</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td>Zinc, Total Recoverable</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
</tr>
</tbody>
</table>

**MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2021.**
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

* Monitoring and reporting requirement only

† pH: the facility will report the minimum and maximum values; pH is not to be averaged.

‡ Cyanide amenable to chlorination: the facility shall use method 4500 CN E for this parameter.

◊ Quarterly sampling

<table>
<thead>
<tr>
<th>QUARTER</th>
<th>MONTHS</th>
<th>QUARTERLY EFFLUENT PARAMETERS</th>
<th>REPORT IS DUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>January, February, March</td>
<td>Sample at least once during any month of the quarter</td>
<td>April 28th</td>
</tr>
<tr>
<td>Second</td>
<td>April, May, June</td>
<td>Sample at least once during any month of the quarter</td>
<td>July 28th</td>
</tr>
<tr>
<td>Third</td>
<td>July, August, September</td>
<td>Sample at least once during any month of the quarter</td>
<td>October 28th</td>
</tr>
<tr>
<td>Fourth</td>
<td>October, November, December</td>
<td>Sample at least once during any month of the quarter</td>
<td>January 28th</td>
</tr>
</tbody>
</table>

B. SCHEDULE OF COMPLIANCE

Schedules of compliance are allowed per 40 CFR 122.47 and 10 CSR 20-7.031(11). The facility shall attain compliance with final effluent limitations established in this permit as soon as reasonably achievable:

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 effective date. The first report is due February 1, 2022. The final report is due February 1, 2023.

3. Within 3 years of the effective date of this permit, the permittee shall attain compliance with the final effluent limits at outfall #002, for total recoverable copper, total recoverable lead, and total recoverable zinc.

All permittees using the eDMR system must submit progress reports via the electronic reporting system.
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 August 1, 2019, respectively, and hereby incorporated as though fully set forth herein.

D. SPECIAL CONDITIONS

1. Chronic Whole Effluent Toxicity (WET) tests shall be conducted as follows:
   a. Freshwater Species and Test Methods: Species and short-term test methods for estimating the chronic toxicity of NPDES effluents are found in the most recent edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 7-day, static, renewal toxicity tests with the following species:
      - The fathead minnow, *Pimephales promelas* (Survival and Growth Test Method 1000.0).
      - The daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0).
   b. Chemical and physical analysis of the 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 or known to be toxic, other approved control water may be used.
   c. Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
   d. The Allowable Effluent Concentration (AEC) is 100%, the dilution series is: 100%, 50%, 25%, 12.5%, and 6.25%.
   e. All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
   f. The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of chronic toxic units (TUc = 100/IC25) reported according to the *Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* chapter on report preparation and test review. The 25 percent Inhibition Effect Concentration (IC25) is the toxic or effluent concentration that would cause 25 percent reduction in mean young per female or in growth for the test populations.
   g. Accelerated Testing Trigger: If the regularly scheduled chronic WET test exceeds the TUc limit, the permittee shall conduct accelerated follow-up WET testing as prescribed in the following conditions. Results of the follow-up accelerated WET testing shall be reported in TUc. This permit requires the following additional toxicity testing if any one test result exceeds a TUc limit.
      1. A multiple dilution test shall be performed for both test species within 60 calendar days of becoming aware the regularly scheduled WET test exceeded a TUc limit, and once every two weeks thereafter until one of the following conditions are met:
         i. Three consecutive multiple-dilution tests are below the TUc limit. No further tests need to be performed until next regularly scheduled test period.
         ii. A total of three multiple-dilution tests exceed the TUc limit.
      2. Follow-up tests do not negate an initial test result.
      3. The permittee shall submit a summary of all accelerated WET test results for the test series along with complete copies of the laboratory reports as received from the laboratory within 14 calendar days of the availability of the third test exceeding a TUc limit.
   h. TIE/TRE Trigger: The following shall apply upon the exceedance of the TUc limit in three accelerated follow-up WET tests. The permittee should contact the Department within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. If the permittee does not contact the Department upon the third follow up test exceeding a TUc limit, a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall submit a plan for conducting a TIE or TRE within 60 calendar days of the date of the automatic trigger or the Department’s direction to perform either a TIE or TRE. The plan shall be based on EPA Methods and include a schedule for completion. This plan must be approved by the Department before the TIE or TRE is begun.

2. The facility shall close all lysimeters and monitoring wells in accordance with Well Rules found at 10 CSR 23. If closure is required.

3. CoMag wastewater treatment plant sludge must be managed appropriately. Sludge may be placed on the tailings piles.

4. Electronic Discharge Monitoring Report (eDMR) Submission System
   Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit), shall be submitted via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data about the NPDES program.
D. SPECIAL CONDITIONS (CONTINUED)

(a) **eDMR Registration Requirements.** The facility must register in the Department’s eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due. Registration and other information regarding MoGEM can be found at [https://dnr.mo.gov/mogem](https://dnr.mo.gov/mogem). Information about the eDMR system can be found at [https://dnr.mo.gov/env/wpp/edmr.htm](https://dnr.mo.gov/env/wpp/edmr.htm). The first user shall register as an Organization Official and the association to the facility must be approved by the Department. Regarding Standard Conditions Part I, §B, #7, the eDMR system is currently the only Department approved reporting method for this permit unless a waiver is granted by the Department.

(b) **Electronic Submissions.** To access the eDMR system, use: [https://apps5.mo.gov/mogems/welcome.action](https://apps5.mo.gov/mogems/welcome.action) For assistance using the eDMR system, contact [edmr@dnr.mo.gov](mailto:edmr@dnr.mo.gov) or call 855-789-3889 or 573-526-2082.

(c) **Waivers from Electronic Reporting.** The facility must electronically submit compliance monitoring data and reports unless a waiver is granted by the Department in compliance with 40 CFR Part 127. Only facilities with an approved waiver request may submit monitoring data and reports on paper to the Department for the period the approved electronic reporting waiver is effective. Facilities may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: [http://dnr.mo.gov/forms/780-2692-f.pdf](http://dnr.mo.gov/forms/780-2692-f.pdf). The department will either approve or deny this electronic reporting waiver request within 120 calendar days.

5. The facility’s SIC code or description is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) hence the facility shall implement a Stormwater Pollution Prevention Plan (SWPPP) which must be prepared and implemented upon permit effective date. 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 annually or if site conditions affecting stormwater 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: *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (EPA 833-B-09-002) published by the EPA in 2015 [https://www.epa.gov/sites/production/files/2015-11/documents/swppp_guide_industrial_2015.pdf](https://www.epa.gov/sites/production/files/2015-11/documents/swppp_guide_industrial_2015.pdf). The purpose of the SWPPP and the Best Management Practices (BMPs) listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effective at preventing pollution [10 CSR 20-2.010(56)] to waters of the state. Corrective action describes the steps the facility took to eliminate the deficiency. The SWPPP must include:

(a) A listing of specific contaminants and their control measures (or BMPs) and a narrative explaining how BMPs are implemented to control and minimize the amount of contaminants potentially entering stormwater.

(b) A map with all outfalls and structural BMPs marked.

(c) A schedule for at least 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. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.

   i. Operational deficiencies must be corrected within seven (7) calendar days.
   
   ii. Minor structural deficiencies must be corrected within fourteen (14) calendar days.
   
   iii. Major structural deficiencies (deficiencies projected to take longer than 14 days to correct) must be reported as an uploaded attachment through the eDMR system with the DMRs. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including proposed timing of the placement of the interim measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. If required by the Department, the permittee shall work with the regional office to determine the best course of action. The permittee should consider temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.

   iv. All actions taken to correct the deficiencies shall be included with the written report, including photographs, and kept with the SWPPP. Additionally, corrective action of major structural deficiencies shall be reported as an uploaded attachment through the eDMR system with the DMRs.

   v. BMP failure causing discharge through an unregistered outfall is considered an illicit discharge and must be reported in accordance with Standard Conditions Part I.

   vi. 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. Electronic versions of the documents and photographs are acceptable.

(d) A provision for designating an individual to be responsible for environmental matters and a provision for providing training to all supervisory personnel responsible for housekeeping, material handling (including but not limited to loading and unloading), storage, and staging of all operational, maintenance, storage, and cleaning areas. Proof of training shall be submitted upon request by the Department.
D. SPECIAL CONDITIONS (CONTINUED)

6. 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, warehouse activities, and other areas and thereby prevent the contamination of stormwater from these substances.
   (b) Ensure adequate provisions are provided to prevent and to protect embankments from erosion.
   (c) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
      (a) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so these materials are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater 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. Spill records should be retained on-site.
      (b) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
      (c) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property.

7. Before releasing water accumulated in petroleum secondary containment areas, it must be examined for hydrocarbon odor and presence of sheen to protect the general criteria found at 10 CSR 20-7.031(4).
   (a) If odor or sheen is found, the water shall not be discharged without treatment and shall be disposed of in accordance with legally approved methods, such as being sent to an accepting wastewater treatment facility.
   (b) If the facility wishes to discharge the accumulated stormwater with hydrocarbon odor or presence of sheen, the water shall be treated using an appropriate removal method. Records of all treatment of water accumulated in secondary containment shall be stored in the SWPPP and be available on demand to the Department.

8. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Clean Water Act Sections 301(b)(2)(C) and (D), §304(b)(2), and §307(a) (2), if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not limited in the permit. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, termination, notice of planned changes, or anticipated non-compliance does not stay any permit condition.

9. All outfalls and permitted features must be clearly marked in the field.

10. Report no discharge when a discharge does not occur during the report period. It is a violation of this permit to report no-discharge when a discharge has occurred.

11. Changes in Discharges of Toxic Pollutant
       In addition to the reporting requirements under §122.41(1), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
       (a) That an activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, 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;
           (3) Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
           (4) One milligram per liter (1 mg/L) for antimony;
           (5) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
           (6) The notification level established by the Department in accordance with 40 CFR 122.44(f).
       (b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”;
           (1) Five hundred micrograms per liter (500 µg/l);
           (2) One milligram per liter (1 mg/l) for antimony;
           (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with §122.21(g)(7).
D. SPECIAL CONDITIONS (CONTINUED)

(4) The level established by the Director in accordance with §122.44(f).

12. Reporting of Non-Detects
   (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way 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 or the reporting limit of the laboratory. Reporting as “non-detect” without also including the detection/reporting limit will be considered failure to report, which is a violation of this permit.
   (c) The permittee shall report the non-detect result using the less than “<” symbol and the laboratory’s detection/reporting limit (e.g. <6).
   (d) See sufficiently sensitive method requirements in Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
   (e) When calculating monthly averages, one-half of the minimum detection limit (MDL) should be used instead of a zero. Where all data are below the MDL, the “<MDL” shall be reported as indicated in item (C).

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

14. This permit does not authorize the placement of fill materials in flood plains, placement of solid materials into any waterway, the obstruction of stream flow, or changing the channel of a defined drainage course. The facility must contact the U.S. Army Corps of Engineers (Corps) to determine if a CWA §404 Department of Army permit is required.

15. Spills, Overflows, and Other Unauthorized Discharges.
   (a) Any spill, overflow, or other discharge(s) not specifically authorized above are unauthorized discharges.
   (b) Should an unauthorized discharge cause or permit any contaminants to discharge or enter waters of the state, the unauthorized discharge must be reported to the regional office as soon as practicable but no more than 24 hours after the discovery of the discharge. If the spill or overflow needs to be reported after normal business hours or on the weekend, the facility must call the Department’s 24 hour spill line at 573-634-2436.
   (c) Discharge from outfall #015 in the absence of a chronic or catastrophic storm event is prohibited and a violation of the terms of this permit. The facility may discharge from outfall #015 when rainfall exceeds the 10-year 365-day rainfall event (chronic) or the 25-year 24-hour rainfall event (catastrophic) or other extreme or chronic events as included on the Design Storm Maps and Tables at http://ag3.agebb.missouri.edu/design_storm/, provided the facility manages the basins appropriately and makes all reasonable attempts to minimize discharges as a result of extreme or chronic precipitation events.

E. LAND DISTURBANCE

The permittee will not be required to procure a separate general permit (MO-RA000000) for land disturbance activities which discharge through outfalls authorized in this permit. If land disturbance activities discharge to any location other than through a permitted outfall, a separate MORA general permit is required. The general permit does not cover disturbance of contaminated soils so a modification of this site specific permit may be required. For land disturbance activities which discharge through outfalls authorized in this permit, the permittee shall select, install, use, operate and maintain appropriate BMPs for the permitted site. The following manuals are acceptable resources for the selection of appropriate BMPs. Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites, (Document number EPA 833-R-06-004) published by the United States Environmental Protection Agency (USEPA) in May 2007. This manual as well as other information, including examples of construction SWPPPs, is available at the USEPA internet site at https://www3.epa.gov/npdes/pubs/industrial_swppp_guide.pdf; and the latest version of Protecting Water Quality: A field guide to erosion, sediment and stormwater best management practices for development sites in Missouri, published by the Missouri Department of Natural Resources. This manual is available on the Department’s internet site as: http://www.dnr.mo.gov/env/wpp/wpcp-guide.htm.
As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)(A)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 (MSOP or operating permit) listed below. A factsheet is not an enforceable part of an operating permit.

### PART I. FACILITY INFORMATION

| Facility Type: | Industrial – Major, Primary, Categorical; >1 MGD |
| SIC Code(s): | 1031 |
| NAICS Code(s): | 212231 |
| Application Date: | 03/29/2019 |
| Expiration Date: | 09/30/2019 |
| Last Inspection: | 07/25/2018 |

**FACILITY DESCRIPTION:**
This facility mines and mills copper, lead, and zinc bearing ores. Domestic wastewater is managed through an underground low pressure discharge system. The tailings impoundment is about 628 acres. The drainage area this basin captures is 3,274 acres according to the Surface Water Management Plan for the Sweetwater Mine/Mill October 29, 2012. The basin for outfall #015 is 215 million gallons for the 10 year 24 hour storm event. The charter number for the continuing authority for this facility is X00270937; this number was verified by the permit writer to be associated with the facility and precisely matches the continuing authority reported by the facility. In accordance with 40 CFR 122.21(f)(6), the Department evaluated other permits currently held by this facility. This facility has the following permits: Air (AP201809026) and NPDES land disturbance permit MORA11284.

### PERMITTED FEATURES/OUTFALL TABLE:

<table>
<thead>
<tr>
<th>OUTFALL</th>
<th>AVERAGE FLOW</th>
<th>DESIGN FLOW</th>
<th>TREATMENT LEVEL</th>
<th>EFFLUENT TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>#001</td>
<td>n/a</td>
<td>0.0045</td>
<td>sub-surface discharge</td>
<td>domestic wastewater</td>
</tr>
<tr>
<td>#002</td>
<td>4.36</td>
<td>13.8 MGD Peak Flows Dependent upon Precipitation</td>
<td>Settling: Dependent on characteristics, additional chemical precipitation</td>
<td>mine dewatering, ore milling, tailings slurry, and dam toe drain discharge</td>
</tr>
<tr>
<td>#015</td>
<td>0</td>
<td>0</td>
<td>retention/settling/no discharge</td>
<td>industrial stormwater</td>
</tr>
</tbody>
</table>

This facility mines and mills copper, lead, and zinc bearing ores. Domestic wastewater is managed through an underground low pressure discharge system.

Permitted Feature #001: Domestic wastewater. The facility has a subsurface discharge system. The facility was monitoring the land surrounding the sub-surface system with lysimeters.

Outfall #002: Process wastewater. The facility produces, through mining and milling, copper, lead, and zinc ores. Process wastewater includes mine dewatering, ore milling, tailings slurry, industrial sludge, and dam toe drain discharge. Treatment is provided via settling. The facility installed a water treatment plant which became operational in January 2017 to provide additional treatment, as needed. The water treatment system is a CoMag system which removes metals, phosphorus, oil, and other contaminants. First the
water is softened using sodium hydroxide which raises the pH, the metals are precipitated out using ferric chloride (coagulant) and
magnetite ballast. A polymer is added to flocculate solids and then sulfuric acid is added to lower the water’s pH back to permissible
effluent limitations.

Outfall #015: Industrially exposed stormwater. Under normal operations, the water in the retention basin is pumped back to the
tailings impoundment (No. 51 Lake) for settling and treatment with ultimate discharge through outfall #002. This stormwater retention
basin has been in place for about six years and is designed and operated to capture normal rainfall events. During this time, the
Department has no record this basin has ever discharged. As described in Special Condition 15.c., overflow and discharge may be
cased by catastrophic and chronic storm events, and is authorized under this permit provided the facility manages the basins
appropriately and makes all reasonable attempts to minimize discharges as a result of such precipitation events. The facility obtained a
construction permit in November of 2012 and the as-builds were provided to the department upon completion in October of 2013.

Storm water runoff within the plant site is currently collected in a retention basin and is pumped back at a rate of 4,000 gallons per
minute to the tailings impoundment. In the event of an overflow, the permit requires monitoring of cadmium, lead, mercury and zinc
to assess potential impacts from the discharge on the receiving stream.

**NO INDUSTRIAL EXPOSURE OUTFALLS:**

**OUTFALL #003** – Never constructed (domestic wastewater lagoon); no NPDES requirements.

**OUTFALL #004** – Non-Industrial Stormwater
The previous permit in 2009 determined no industrial exposure. This outfall/drainage area must be included in the SWPPP to continue
the designation of no industrial exposure.

Legal Description: NE ¼, NE ¼, Sec. 34, T31N, R2W, Reynolds County
UTM Coordinates: X = 664705, Y = 4133913

**OUTFALL #005** – Non-Industrial Stormwater
Mine shaft air venting; circa 1996 determined no industrial exposure. This outfall/drainage area must be included in the SWPPP to
continue the designation of no industrial exposure.

Legal Description: NE ¼, NW ¼, Sec. 21, T31N, R2W, Reynolds County
UTM Coordinates: X = 662236; Y = 4137133

**OUTFALL #006** – Non-Industrial stormwater
Mine shaft air venting; circa 1996 determined no industrial exposure. This outfall/drainage area must be included in the SWPPP to
continue the designation of no industrial exposure.

Legal Description: NE ¼, SE ¼, Sec. 34, T31N, R2W, Reynolds County
UTM Coordinates: X = 664694, Y = 4133261

**REMOVED GROUNDWATER MONITORING LYSIMETERS:**

**LY #005** – Groundwater monitoring system for feature #001; no discharge – SIC # 1031
UTM Coordinates: X = 664158, Y = 4136451

**LY #006** – Groundwater monitoring system for feature #001; no discharge – SIC # 1031
UTM Coordinates: X = 664172, Y = 4136450

**LY #007** – Groundwater monitoring system for feature #001; no discharge – SIC # 1031
UTM Coordinates: X = 664191, Y = 4136450

**LY #008** – Groundwater monitoring system for feature #001; no discharge – SIC # 1031
UTM Coordinates: X = 664207, Y = 4136451

**LY #009** – Groundwater monitoring system for feature #001; no discharge – SIC # 1031
UTM Coordinates: X = 664203, Y = 4136464

**LY #010** – Groundwater monitoring system for feature #001; no discharge – SIC # 1031
UTM Coordinates: X = 664217, Y = 4136464

**LY #011** – Groundwater monitoring system for feature #001; no discharge – SIC # 1031
UTM Coordinates: X = 664261, Y = 4136473
**LY #012** – Groundwater monitoring system for feature #001; no discharge – SIC # 1031
UTM Coordinates: X = 664274, Y = 4136467

**LY #013** – Groundwater monitoring system for feature #001; no discharge – SIC # 1031
UTM Coordinates: X = 664290, Y = 4136461

**LY #014** – Groundwater monitoring system for feature #001; no discharge – SIC # 1031
UTM Coordinates: X = 664305, Y = 4136455

**FACILITY PERFORMANCE HISTORY & COMMENTS:**
The electronic discharge monitoring reports were reviewed since the last renewal. The facility exceeded lead limitations twice at outfall #002. There was no discharge from the stormwater basin, outfall #015. The 2018 inspection showed the facility was not in compliance for not meeting permit limits. This facility is in Water Protection Program enforcement for limitation exceedances.

In December 2019, the permit writer noticed this facility is within the Clearwater Lake watershed area. This area contains lake nutrient criteria in Table N of 10 CSR 20-7.031. The Department has completed modeling at the time of issuance and no RP for nutrients was found for Doe Run.

**FACILITY MAP:**

![Facility Map](image-url)
PART II. RECEIVING WATERBODY INFORMATION

RECEIVING WATERBODY’S WATER QUALITY:
The receiving stream, Adair Creek, has no concurrent water quality data available. The Hazardous Waste Program has performed some stream monitoring of Logan Creek, Adair Creek, and Sweetwater Creek from 2004 through 2008. The regional office also obtained stream data on February 10, 2015 as shown below.

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Upstream, Total Recoverable</th>
<th>Upstream, Dissolved Fraction</th>
<th>Beaver Dam, Total Recoverable</th>
<th>Beaver Dam, Dissolved Fraction</th>
<th>Downstream, Total Recoverable</th>
<th>Downstream, Dissolved Fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardness</td>
<td>52.0 mg/L</td>
<td>49.4 mg/L</td>
<td>237 mg/L</td>
<td>210 mg/L</td>
<td>462 mg/L</td>
<td>278 mg/L</td>
</tr>
<tr>
<td>Cadmium</td>
<td>&lt;0.10 µg/L</td>
<td>&lt;0.10 µg/L</td>
<td>0.95 µg/L</td>
<td>0.31 µg/L</td>
<td>8.94 µg/L</td>
<td>0.44 µg/L</td>
</tr>
<tr>
<td>Copper</td>
<td>&lt;0.50 µg/L</td>
<td>&lt;0.50 µg/L</td>
<td>9.11 µg/L</td>
<td>1.21 µg/L</td>
<td>84.3 µg/L</td>
<td>1.99 µg/L</td>
</tr>
<tr>
<td>Lead</td>
<td>0.94 µg/L</td>
<td>0.50 µg/L</td>
<td>306 µg/L</td>
<td>18.6 µg/L</td>
<td>2640 µg/L</td>
<td>31.0 µg/L</td>
</tr>
<tr>
<td>Zinc</td>
<td>4.82 µg/L</td>
<td>1.57 µg/L</td>
<td>160 µg/L</td>
<td>88.5 µg/L</td>
<td>1110 µg/L</td>
<td>182 µg/L</td>
</tr>
</tbody>
</table>

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. [http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm](http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm)

- Applicable; this facility discharges to a tributary to Logan Creek (WBID #2763) which is listed on the 2012 CWA § 303(d) list.

  The impairment is of the aquatic life use (AQL/WHH). The cause of the impairment is listed as Sweetwater Mine & Mill. The impairment is for 36 stream miles of Logan Creek.

**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; hence, the purpose of a TMDL is to determine the pollutant loading a specific waterbody can assimilate without exceeding water quality standards. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan or TMDL may be developed. The TMDL shall include the WLA calculation. [http://dnr.mo.gov/env/wpp/tmdl/](http://dnr.mo.gov/env/wpp/tmdl/)

- Not applicable; this facility is not associated with a TMDL.

**UPSTREAM OR DOWNSTREAM IMPAIRMENTS:**

The permit writer has reviewed upstream and downstream stream segments of this facility for impairments.

- This facility is located at the top of the watershed therefore no upstream is present at this location.
- The permit writer has noted downstream of the facility the stream is on the 303(d) list. Per 10 CSR 20-7.031(4)(E), this permit contains effluent limitations for those parameters.

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

Per Missouri’s Effluent Regulations [10 CSR 20-7.015(1)(B)], waters of the state are divided into seven categories. This facility is subject to effluent limitations derived on a site specific basis which are presented in each outfall’s effluent limitation table and further discussed in Part IV: Effluents Limits Determinations

- Subsurface Water (outfall #001)
- All Other Waters

**RECEIVING WATERBODY TABLE:**

<table>
<thead>
<tr>
<th>OUTFALL</th>
<th>WATERBODY NAME</th>
<th>CLASS</th>
<th>WBID</th>
<th>DESIGNATED USES*</th>
<th>DISTANCE TO SEGMENT</th>
<th>12-DIGIT HUC</th>
</tr>
</thead>
<tbody>
<tr>
<td>#002</td>
<td>MUDD 8-30-13 V1.0 Locally Known as</td>
<td>C</td>
<td>3960</td>
<td>HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)</td>
<td>0.0 mi</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adair Creek</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Logan Creek (Losing)</td>
<td>P</td>
<td>2763</td>
<td>HHP, IRR, LWW, SCR, WBC-A, WWH (AQL)</td>
<td>0.7 mi</td>
<td></td>
</tr>
<tr>
<td>#015</td>
<td>MUDD 8-30-13 V1.0 Locally Known as</td>
<td>C</td>
<td>3960</td>
<td>HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)</td>
<td>0.0 mi</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tributary to Sweetwater Creek</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sweetwater Creek</td>
<td>P</td>
<td>2764</td>
<td>HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)</td>
<td>1.3 mi</td>
<td></td>
</tr>
</tbody>
</table>

n/a not applicable

Classes are hydrologic classes as defined in 10 CSR 20-7.031(1)(F). L1: Lakes with drinking water supply - wastewater discharges are not permitted to occur to L1 watersheds per 10 CSR 20-7.015(3)(C); L2: major reservoirs; L3: all other public and private lakes; P: permanent streams; C: streams which may cease flow in dry periods but maintain pools supporting aquatic life; E: streams which do not maintain surface flow; and W: wetland. Losing streams are defined in 10 CSR 20-7.031(1)(O) and are designated on the Losing Stream dataset or determined by the Department to lose 30% or more of flow to the subsurface.

WBID = Waterbody Identification: Missouri Use Designation Dataset per 10 CSR 20-7.031(1)(Q) and (S) as 8-20-13 MUDD V1.0 or newer; data can be found as an ArcGIS shapefile on MSDIS at ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use_shp.zip; New C streams described on the dataset per 10 CSR 20-7.031(2)(J)(A)3. as 100K Extent Remaining Streams.

Per 10 CSR 20-7.031, the Department defines the Clean Water Commission’s 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 are to be maintained in the receiving streams in accordance with [10 CSR 20-7.031(1)(C)]. Uses which may be found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.: ALP = Aquatic Life Protection (formerly AQL; current uses are defined to ensure the protection and propagation of fish/shellfish and wildlife, further subcategorized as: WWH = Warm Water Habitat; CLH = Cool Water Habitat; CDH = Cold Water Habitat; EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses ALP effluent limitations in 10 CSR 20-7.031 Table A1-A2 for all habitat designations unless otherwise specified.

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water

- WBC = Whole Body Contact recreation where the entire body is capable of being submerged;
- WBC-A = whole body contact recreation supporting swimming uses and has public access;
- WBC-B = whole body contact recreation not supported in WBC-A;
- SCR = Secondary Contact Recreation (like fishing, wading, and boating)

10 CSR 20-7.031(1)(C)3. to 7.: HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish and drinking of water;
IRR = irrigation for use on crops utilized for human or livestock consumption
LWW = Livestock and Wildlife Watering (current narrative use is defined as LWP = Livestock and Wildlife Protection);
DWS = Drinking Water Supply
IND = industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Tables A1-B3 currently does not have corresponding habitat use criteria for these defined uses): WSA = storm- and flood-water storage and attenuation; WHP = habitat for resident and migratory wildlife species; WRC = recreational, cultural, educational, scientific, and natural aesthetic values and uses; WHC = hydrologic cycle maintenance.

RECEIVING WATERBODY MONITORING REQUIREMENTS:
No receiving water monitoring requirements are recommended at this time.

MIXING CONSIDERATIONS:
For all outfalls, mixing zone and zone of initial dilution are not allowed per 10 CSR 20-7.031(5)(A)4.B.(I)(a) and (b), as the base stream flow does not provide dilution to the effluent.

PART III. RATIONALE AND DERIVATION OF 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 is an existing facility.

ANTIBACKSLIDING:
Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(l)] require a reissued permit to be as stringent as the previous permit with some exceptions. Backsliding (a less stringent permit limitation) is only allowed under certain conditions.

Material and substantial alterations or additions to the permitted facility occurred after permit issuance justify the application of a less stringent effluent limitation.

Influent monitoring for the subsurface domestic wastewater system was removed at this renewal. The department obtained sufficient data to show wastewater being sent to the domestic wastewater system was contaminated with lead which is not necessarily treatable in the type of subsurface system installed at this facility. Please see special conditions and schedule of compliance.

Monitoring subsurface for the domestic wastewater system was removed at this permit issuance (permitted features #005 through #014). The Department has determined an amenable remedy for the high levels of lead in the groundwater in the subsurface domestic system. See schedule of compliance.

Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) which would have justified the application of a less stringent effluent limitation.

DMR data supplied by the permittee revised effluent limitations due to coefficient of variation.

Flow monitoring has been removed due to the fact that the facility is largely vacant on nights and weekends making the data highly inconsistent.

The permit writer determined that nutrient monitoring at outfall #002 is no longer required due to recent modeling which reported no RP by Doe Run for the Clearwater Lake Watershed.

Other:
Effluent limitations for cadmium were revised based on new water quality standards. The raised effluent limitations provided in this permit comply with the new limits approved by the EPA and are expected to remain protective of the receiving stream’s uses to be maintained.

ANTIDEGRADATION REVIEW:
Process water discharges with new, altered, or expanding flows, the Department is to document, by means of antidegradation review, if the use of a water body’s available assimilative capacity is justified. In accordance with Missouri’s water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the Department prior to establishing, altering, or expanding discharges. See http://dnr.mo.gov/env/wpp/permits/antideg-implementation.htm

Not applicable; the facility has not submitted information proposing expanded or altered process water discharge; no further degradation proposed therefore no further review necessary.

This permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) which must include an alternative analysis (AA) of the BMPs. The SWPPP must be developed, implemented, updated, and maintained at the facility. Failure
to implement and maintain the chosen alternative, is a permit violation. The AA is a structured evaluation of BMPs to determine which are reasonable and cost effective. Analysis should include practices designed to be 1) non-degrading, 2) less degrading, or 3) degrading water quality. The chosen BMP will be the most reasonable and cost effective while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The analysis must demonstrate why “no discharge” or “no exposure” are not feasible alternatives at the facility. Existing facilities with established SWPPPs and BMPs need not conduct an additional alternatives analysis unless new BMPs are established to address BMP failures or benchmark exceedences. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.015(9)(A5) and 7.031(3). For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the AA performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

**BEST MANAGEMENT PRACTICES:**
Minimum site-wide best management practices are established in this permit to assure all permittees are managing their sites equally to protect waters of the state from certain activities which could cause negative effects in receiving water bodies. While not all sites require a SWPPP because the SIC codes are specifically exempted in 40 CFR 122.26(b)(14), these best management practices are not specifically included for stormwater purposes. These practices are minimum requirements for all industrial sites to protect waters of the state. If the minimum best management practices are not followed, the facility may violate general criteria [10 CSR 20-7.031(4)]. Statutes are applicable to all permitted facilities in the state, therefore pollutants cannot be released unless in accordance with RSMo 644.011 and 644.016(17).

**CHANGES IN DISCHARGES OF TOXIC POLLUTANT:**
This special condition reiterates the federal rules found in 40 CFR 122.44(f) and 122.42(a)(1). In these rules, the facility is required to report changes in amounts of toxic substances discharged. Toxic substances are defined in 40 CFR 122.2 as “…any pollutant listed as toxic under section 307(a)(1) or, in the case of “sludge use or disposal practices,” any pollutant identified in regulations implementing section 405(d) of the CWA.” Section 307 of the clean water act then refers to those parameters found in 40 CFR 401.15. The permittee should also consider any other toxic pollutant in the discharge as reportable under this condition.

**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.

**DOMESTIC WASTEWATER, SLUDGE, AND BIOSOLIDS:**
Domestic wastewater is defined as wastewater (i.e., human sewage) originating primarily from the sanitary conveyances of bathrooms and kitchens. Domestic wastewater excludes stormwater, animal waste, process waste, and other similar waste.

- Applicable; this facility does not fall under the jurisdiction of the Health Department and discharges domestic wastewater subsurface; see Underground Injection Control (UIC) requirements below and in the permit. This facility discharges domestic wastewater subsurface with flows greater than 3,000 gallons per day as calculated in accordance with 19 CSR 20-3.060(1)(E) and tables 2A and 2B. The domestic wastewater system is jurisdiction of the Missouri Department of Natural Resources. This permit does not authorize any process wastewater for introduction into the sub-surface system.

Sewage sludge is solid, semi-solid, 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 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. Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for productive use (i.e. fertilizer) and after having pathogens removed.


- Applicable, sludge is removed by contract hauler. The permitted management strategy must be followed, see FACILITY DESCRIPTION in the permit. If the described management strategy cannot be followed, the permittee must obtain a permit modification. See Standard Conditions Part III.
- Standard conditions Part III is incorporated into this permit.

**EFFLUENT LIMITATIONS:**
Effluent limitations derived and established for this permit are based on current operations of the facility and applied per 10 CSR 20-7.015(9)(A). Any flow through the outfall is considered a discharge and must be sampled and reported as provided below. Future permit action due to facility modification may contain new operating permit terms and conditions which supersede the terms and conditions, including effluent limitations, of this operating permit. Daily maximums and monthly averages are required per 40 CFR 122.45(d)(1) for continuous discharges (not from a POTW).
**EFFLUENT LIMITATION GUIDELINE:**
Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology based limitations which must be met by the applicable facility at all times.
- The facility has an associated Effluent Limit Guideline (ELG) at 40 CFR 440J applicable to the wastewater discharge at this site, and is applied under 40 CFR 125.3(a). Should Reasonable Potential be established for any particular parameter, and water-quality derived effluent limits are more protective of the receiving water’s quality, the WQS will be used as the limiting factor in accordance with 40 CFR 122.44(d) and 10 CSR 20-7.015(9)(A). See Part IV: EFFLUENT LIMITS DETERMINATION.

**ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM:**
The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. The final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: [http://dnr.mo.gov/forms/780-2692-f.pdf](http://dnr.mo.gov/forms/780-2692-f.pdf). A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is not transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

To assist the facility in entering data into the eDMR system, the permit describes limit sets in each table in Part A of the permit. The data entry personnel should use these identifiers to assure data entry is being completed appropriately.
- The permittee/facility is currently using the eDMR data reporting system.

**GENERAL CRITERIA CONSIDERATIONS:**
In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants determined to cause, have reasonable potential to cause, or to contribute to, an excursion above any water quality standard, including narrative water quality criteria. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether discharges have reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). In instances where reasonable potential exists, the permit includes limitations within the permit to address the reasonable potential. In discharges where reasonable potential does not exist, the permit may include monitoring to later determine the discharge’s potential to impact the narrative criteria. Additionally, §644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state it shall be unlawful for any person to cause or allow 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.
- Applicable; this permit contains effluent limitations to protect for toxicity in accordance with 10 CSR 20-7.031(4)(D) and (G); see Part IV for specific pollutant discussion.

**GROUNDWATER MONITORING:**
Groundwater is a water of the state according to 10 CSR 20-2.010(82), and is subject to regulations at 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.
- This facility was monitoring the groundwater at the site to determine removal rates of metals from the domestic wastewater system. See special conditions.
- The facility is already performing quarterly monitoring of monitoring wells (SW-1 through SW-3) wells for the land reclamation program.

**LAND APPLICATION:**
Land application of wastewater or sludge may be performed by facilities to maintain a basin as no-discharge. Land application of wastewater or sludge shall comply with the all applicable no-discharge requirements listed in 10 CSR 20-6.015). These requirements ensure appropriate operation of the no-discharge land application systems and prevent unauthorized and illicit discharges to waters of the state. Land applications by a contract hauler on fields the permittee has a spreading agreement on are not required to be in this permit. A spreading agreement does not constitute the field being rented or leased by the permittee as they do not have any control over management of the field.
Not applicable; this permit does not authorize operation of a surface land application system to disperse wastewater or domestic sludge.

### LAND DISTURBANCE:

Land disturbance, sometimes called construction activities, are actions which cause disturbance of the root layer or soil; these include clearing, grading, and excavating of the land. 40 CFR 122.26(b)(14) and 10 CSR 20-6.200(3) requires permit coverage for these activities. Coverage is not required for facilities only providing maintenance of original line and grade, hydraulic capacity, or to continue the original purpose of the facility.

Applicable; this permit provides coverage for land disturbance activities. The SWPPPs required under this permit may be combined into one document.

### MAJOR WATER USER:

Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons (or 70 gallons per minute) or more per day combined from all sources from any stream, river, lake, well, spring, or other water source is considered a major water user in Missouri. All major water users are required by law to register water use annually (Missouri Revised Statues Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). [https://dnr.mo.gov/pubs/pub2236.htm](https://dnr.mo.gov/pubs/pub2236.htm)

Applicable; this facility is a major water user and is registered with the state.

### OIL/WATER SEPARATORS:

Oil water separator (OWS) tank systems are frequently found at industrial sites where process water and stormwater may contain oils and greases, oily wastewaters, or other immiscible liquids requiring separation. Food industry discharges typically require pretreatment prior to discharge to municipally owned treatment works. Per 10 CSR 26-2.010(2)(B), all oil water separator tanks must be operated according to manufacturer’s specifications and authorized in NPDES permits or may be regulated as a petroleum tank.

Not applicable; the permittee has not disclosed the use of any oil water separators they wish to include under the NPDES permit at this facility and therefore oil water separator tanks are not authorized by this permit.

### REASONABLE POTENTIAL (RP):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants which are (or may be) discharged at a level causing or have the reasonable potential to cause (or contribute to) an in-stream excursion above narrative or numeric water quality standards. Per 10 CSR 20-7.031(4), general criteria shall be applicable to all waters of the state at all times; however, acute toxicity criteria may be exceeded by permit in zones of initial dilution, and chronic toxicity criteria may be exceeded by permit in mixing zones. If the permit writer determines any given pollutant has the reasonable potential to cause or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for the pollutant per 40 CFR Part 122.44(d)(1)(iii) and the most stringent limits per 10 CSR 20-7.031(9)(A). Permit writers may use mathematical reasonable potential analysis (RPA) using the Technical Support Document for Water Quality Based Toxics Control (TSD) methods (EPA/505/2-90-001) as found in Section 3.3.2, or may also use reasonable potential determinations (RPD) as provided in Sections 3.1.2, 3.1.3, and 3.2 of the TSD.

Applicable; an RPA was conducted on appropriate parameters and was conducted as per (TSD Section 3.3.2). A more detailed version including calculations of this RPA is available upon request. See Wasteload Allocations (WLA) for Limits in this section.

<table>
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<tr>
<th>Parameter</th>
<th>Units</th>
<th>CMC Acute</th>
<th>CCC Chronic</th>
<th>Listing</th>
<th>Daily Max</th>
<th>Monthly Average</th>
<th>n#</th>
<th>CV</th>
<th>n Max</th>
<th>MF</th>
<th>RWC Acute</th>
<th>RWC Chronic</th>
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<tr>
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<td>µg/L</td>
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<td>Ammonia as Nitrogen (Winter) mg/L</td>
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<td>YES</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Identified as a contaminant of concern in the effluent limitation guideline therefore limits will remain in this permit due to antibacksliding regulations and requirements in 40 CFR 122.44.

Units are (µg/L) unless otherwise noted.

n/a Not Applicable

n number of samples; if the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent.

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

CCC continuous chronic concentration

CMC continuous maximum concentration

RWC Receiving Water Concentration; concentration of a toxicant or the parameter in the receiving water after mixing (if applicable)

MF Multiplying Factor; 99% confidence level and 99% probability basis

RP Reasonable Potential: 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).
Applicable; the permit writer conducted an RPD on applicable parameters within the permit. See Part IV: Effluent Limits Determinations below.

Permit writers use the Department’s permit writer’s manual (http://dnr.mo.gov/env/wpp/permits/manual/permit-manual.htm), the EPA’s permit writer’s manual (https://www.epa.gov/npdes/npdes-permit-writers-manual), program policies, and best professional judgment. For each parameter in each permit, the permit writer carefully considers all applicable information regarding: technology based effluent limitations, effluent limitation guidelines, water quality standards, stream flows and uses, and all applicable site specific information and data gathered by the permittee through discharge monitoring reports and renewal (or new) application sampling. Best professional judgment is based on the experience of the permit writer, cohorts in the Department and resources at the EPA, research, and maintaining continuity of permits if necessary. For stormwater permits, the permit writer is required per 10 CSR 6.200(6)(B)2 to consider: A. application and other information supplied by the permittee; B. effluent guidelines; C. best professional judgment of the permit writer; D. water quality; and E. BMPs. Part IV provides specific decisions related to this permit.

The permit writer reviewed application materials, DMR data, past inspections, and other site specific factors to evaluate general and narrative water quality reasonable potential for this facility. Per the permit writer’s best professional judgment, based on available data and full and accurate disclosure on application materials, this facility demonstrates reasonable potential for excursions from the general or narrative water quality criteria. See Part IV: Effluent Limit Determinations for specific parameter RP.

**Sampling Frequency Justification:**
Sampling and reporting frequency was generally retained from previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges shall be permitted with daily maximum and monthly average limits. Minimum sampling frequency for all parameters is annually per 40 CFR 122.44(i)(2).

Sampling frequency for stormwater-only outfalls is typically quarterly even though BMP inspection occurs monthly. The facility may sample more frequently if additional data is required to determine if best management operations and technology are performing as expected.

**Sampling Type Justification:**
Sampling type was continued from the previous permit. The sampling types are representative of the discharges, and are protective of water quality. Discharges with altering effluent should have composite sampling; discharges with uniform effluent can have grab samples. Grab samples are usually appropriate for stormwater. Parameters which must have grab sampling are: pH, ammonia, *E. coli*, total residual chlorine, free available chlorine, hexavalent chromium, dissolved oxygen, total phosphorus, volatile organic compounds, and others.

**Schedule of Compliance (SOC):**
A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, 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. SOCs are allowed under 40 CFR 122.47 providing certain conditions are met. A SOC is not allowed:

- For effluent limitations based on technology-based standards established in accordance with federal requirements, if the deadline for compliance established in federal regulations has passed. 40 CFR § 125.3.
- For a newly constructed facility in most cases. Newly constructed facilities must meet applicable effluent limitations when discharge begins, because the facility has installed the appropriate control technology as specified in a permit or antidegradation review. A SOC is allowed for a new water quality based effluent limit not included in a previously public noticed permit or antidegradation review, which may occur if a regulation changes during construction.
- To develop a TMDL, UAA, or other study associated with development of a site specific criterion. A facility is not prohibited from conducting these activities, but a SOC may not be granted for conducting these activities. In order to provide guidance in developing SOCs, and to attain a greater level of consistency, the Department issued a policy on development of SOCs on October 25, 2012. The policy provides guidance to permit writers on standard time frames for schedules for common activities, and guidance on factors to modify the length of the schedule.
- 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(12)]. The facility has been given a schedule of compliance to meet final effluent limits at outfall #002. See permit Sections A and B for parameters and compliance dates.

**Spills, Overflows, and Other Unauthorized Discharge Reporting:**
Per 260.505 RSMo, 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. http://dnr.mo.gov/env/esp/spillbill.htm
Any other spills, overflows, or unauthorized discharges reaching waters of the state must be reported to the regional office during normal business hours, or after normal business hours, to the Department’s 24 hour Environmental Emergency Response spill line at 573-634-2436.

**SLUDGE – INDUSTRIAL:**
Industrial sludge is solid, semi-solid, 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.

- Applicable; this permit does not authorize land application of industrial sludge. Sludge from the water treatment process are placed in the tailings impoundment. The permitted management strategy must be followed, see permit. If the permitted management strategy cannot be followed, the permittee must obtain a permit modification.

**STANDARD CONDITIONS:**
The standard conditions Part I attached to this permit incorporate all sections of 40 CFR 122.41(a) through (n) by reference as required by law. These conditions, in addition to the conditions enumerated within the standard conditions should be reviewed by the permittee to ascertain compliance with this permit, state regulations, state statutes, federal regulations, and the Clean Water Act. Standard Conditions Part III, if attached to this permit, incorporate all requirements dealing with domestic sludges.

**STORMWATER PERMITTING: LIMITATIONS AND BENCHMARKS:**
Because of the fleeting nature of stormwater discharges, the Department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater discharges. The Technical Support Document for Water Quality Based Toxics Control (EPA/505/2-90-001; 1991) Section 3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater-only outfalls will generally only contain a maximum daily limit (MDL), benchmark, or monitoring requirement as dictated by site specific conditions, the BMPs in place, past performance of the facility, and the receiving water’s current quality. When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer, if there is no RP for water quality excursions.

- Applicable, this facility has outfall #015 which contains stormwater.

**STORMWATER POLLUTION PREVENTION PLAN (SWPPP):**
In accordance with 40 CFR 122.44(k), Best Management Practices (BMPs) must be used to control or abate the discharge of pollutants when: 1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) Authorized under section 402(p) of the CWA for the control of stormwater discharges; 3) Numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. In accordance with the EPA’s Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (EPA 833-B-09-002) published by the EPA in 2015 https://www.epa.gov/sites/production/files/2015-11/documents/swppp_guide_industrial_2015.pdf, BMPs are measures or practices used to reduce the amount of pollution entering waters of the state from a permitted facility. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to 1) identify sources of pollution or contamination, and 2) select and carry out actions which prevent or control the pollution of stormwater discharges. Additional information can be found in Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices (EPA 832-R-92-006; September 1992).

A SWPPP must be prepared by the permittee if the SIC code is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2). A SWPPP may be required of other facilities where stormwater has been identified as necessitating better management. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged 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 or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the 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 the facility will employ the control measures determined to be adequate to achieve the benchmark values discussed above. The facility will conduct monitoring and inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example, if sample results from an 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.

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. For further guidance, consult the antidegradation implementation procedure (http://dnr.mo.gov/env/wpp/docs/AIP050212.pdf).

Alternative Analysis (AA) evaluation of the BMPs is a structured evaluation of BMPs which are reasonable and cost effective. The AA evaluation should include practices designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of AIP defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The AA evaluation must demonstrate why “no discharge” or “no exposure” is not a feasible alternative at the facility. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3) Water Quality Standards and Antidegradation Implementation Procedure (AIP), Section II.B.

If parameter-specific numeric benchmark exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which 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 1) 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; 2) financial data of the company and documentation of cost associated with BMPs for review and 3) the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. 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 shall be submitted in the form of an operating permit modification, which includes an appropriate fee; the application is found at: https://dnr.mo.gov/forms/#WaterPollution

✓ Applicable; a SWPPP shall be developed and implemented for this facility.

**SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:**

Please review Standard Conditions Part 1, section A, number 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 and/or 40 CFR 136 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 the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations 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 quantifies the pollutant below the level of the applicable water quality criterion 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 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 and or 40 CFR 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established. A permittee is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive. 40 CFR 136 lists the approved methods accepted by the Department. Tables A1-B3 at 10 CSR 20-7.031 shows water quality standards.

**UNDERGROUND INJECTION CONTROL (UIC):**

The UIC program for all classes of wells in the State of Missouri is administered by the Missouri Department of Natural Resources and approved by EPA pursuant to section 1422 and 1425 of the Safe Drinking Water Act (SDWA) and 40 CFR 147 Subpart AA. Injection wells are classified based on the liquids which are being injected. Class I wells are hazardous waste wells which are banned by RSMo 577.155; Class II wells are established for oil and natural gas production; Class III wells are used to inject fluids to extract minerals; Class IV wells are also banned by Missouri in RSMo 577.155; Class V wells are shallow injection wells; some examples are heat pump wells and groundwater remediation wells. Domestic wastewater being disposed of sub-surface is also considered a Class V well. In accordance with 40 CFR 144.82, construction, operation, maintenance, conversion, plugging, or closure of injection wells shall not cause movement of fluids containing any contaminant into Underground Sources of Drinking Water (USDW) if the presence of any contaminant may cause a violation of drinking water standards or groundwater standards under 10 CSR 20-7.031, or other health based standards, or may otherwise adversely affect human health. If the director finds the injection activity may endanger USDWs, the Department may require closure of the injection wells, or other actions listed in 40 CFR 144.12(c), (d), or (e). In accordance with 40 CFR 144.26, the permittee shall submit a Class V Well Inventory Form for each active or new underground injection well drilled, or when the status of a well changes, to the Missouri Department of Natural Resources, Geological Survey Program, P.O. Box 250, Rolla, Missouri 65402. The Class V Well Inventory Form can be requested from the Geological Survey Program or can be found at the following web address: http://dnr.mo.gov/forms/780-1774-f.pdf
✓ Applicable; this facility has disclosed sub-surface domestic wastewater system(s) are located at this site. The facility will be subject to standard conditions Part III to impose conditions on the fate of domestic wastewater sludge and biosolids from the system(s).

**VARIANCE:**
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 permit is not drafted under premise of a petition for variance.

**WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:**
As per [10 CSR 20-2.010(78)], the WLA is the amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does not provide adequate protection for the receiving water, then the other must be used per 10 CSR 20-7.015(9)(A).
✓ Applicable; wasteload allocations for toxic parameters were calculated using water quality criteria or water quality model results and by applying the dilution equation below; WLAs are calculated using the Technical Support Document For Water Quality-Based Toxics Control or TSD EPA/505/2-90-001; 3/1991.

\[
C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)}
\]

(EPA/505/2-90-001, Section 4.5.5)

Where
- \(C\) = downstream concentration
- \(C_s\) = upstream concentration
- \(Q_s\) = upstream flow
- \(C_e\) = effluent concentration
- \(Q_e\) = effluent flow

✓ Acute wasteload allocations designated as daily maximum limits (MDL) 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).
✓ Chronic wasteload allocations designated as monthly average limits (AML) 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).
✓ Number of Samples “n”: 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 assumption which should be, at a minimum, targeted to comply with the values dictated by the WLA. Therefore, it is recommended the actual planned frequency of monitoring 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”. For total ammonia as nitrogen, “n = 30” is used.

**WASTELOAD ALLOCATION (WLA) MODELING:**
Permittees may submit site specific studies to better determine the site specific wasteload allocations applied in permits.
✓ Applicable; the facility completed a dissolved metals translator study in 2011 for outfall #002 discharge to Adair Creek. This permit implements the study for cadmium and lead. The study was also completed for copper and zinc but these two metals showed no reasonable potential to cause or contribute to exceedances of water quality standards therefore limits within this permit were modified to technology-only limits.
PART IV. EFFLUENT LIMITS DETERMINATIONS

PERMITTED FEATURE #001 – SUBSURFACE INFLUENT MONITORING

EFFLUENT LIMITATIONS TABLE:

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>Unit</th>
<th>DAILY MAX</th>
<th>MONTHLY AVG.</th>
<th>PREVIOUS PERMIT LIMITS</th>
<th>MINIMUM SAMPLING FREQUENCY</th>
<th>REPORTING FREQUENCY</th>
<th>SAMPLE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>METALS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium, TR</td>
<td>μg/L</td>
<td>*</td>
<td>*</td>
<td>NEW</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td>Copper, TR</td>
<td>μg/L</td>
<td>*</td>
<td>*</td>
<td>NEW</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td>Lead, TR</td>
<td>μg/L</td>
<td>*</td>
<td>*</td>
<td>NEW</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td>Zinc, TR</td>
<td>μg/L</td>
<td>*</td>
<td>*</td>
<td>NEW</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
</tbody>
</table>

* monitoring and reporting requirement only

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow
Flow monitoring has been removed due to the fact that the facility is largely vacant nights and weekends making the data highly inconsistent.

METALS:

Cadmium, Total Recoverable
Influent monitoring required to determine metals loading to the subsurface system.

Copper, Total Recoverable
Influent monitoring required to determine metals loading to the subsurface system.

Lead, Total Recoverable
Influent monitoring required to determine metals loading to the subsurface system.

Zinc, Total Recoverable
Influent monitoring required to determine metals loading to the subsurface system.
## Outfall #002 – Mining Wastewater

### Effluent Limitations Table:

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>Unit</th>
<th>DAILY MAX</th>
<th>MONTHLY AVG.</th>
<th>PREVIOUS PERMIT LIMITS</th>
<th>MINIMUM SAMPLING FREQUENCY</th>
<th>REPORTING FREQUENCY</th>
<th>SAMPLE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow</td>
<td>MGD</td>
<td>*</td>
<td>*</td>
<td>SAME</td>
<td>ONCE/MONTH</td>
<td>MONTHLY</td>
<td>24 HR. Tot</td>
</tr>
<tr>
<td><strong>Conventional</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyanide, Amenable</td>
<td>µg/L</td>
<td>*</td>
<td>*</td>
<td>NEW</td>
<td>ONCE/QUARTER</td>
<td>QUARTERLY</td>
<td>GRAB</td>
</tr>
<tr>
<td>pH †</td>
<td>SU</td>
<td>6.5 to 9.0</td>
<td>6.5 to 9.0</td>
<td>SAME</td>
<td>ONCE/MONTH</td>
<td>MONTHLY</td>
<td>GRAB</td>
</tr>
<tr>
<td>Total Suspended Solids (TSS)</td>
<td>mg/L</td>
<td>30</td>
<td>20</td>
<td>SAME</td>
<td>ONCE/MONTH</td>
<td>MONTHLY</td>
<td>GRAB</td>
</tr>
<tr>
<td><strong>Metals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium, TR</td>
<td>µg/L</td>
<td>2</td>
<td>1</td>
<td>0.9, 0.5</td>
<td>ONCE/MONTH</td>
<td>MONTHLY</td>
<td>GRAB</td>
</tr>
<tr>
<td>Copper, TR</td>
<td>µg/L</td>
<td>34.3</td>
<td>21.1</td>
<td>SAME</td>
<td>ONCE/MONTH</td>
<td>MONTHLY</td>
<td>GRAB</td>
</tr>
<tr>
<td>Iron, TR</td>
<td>µg/L</td>
<td>*</td>
<td>*</td>
<td>NEW</td>
<td>ONCE/QUARTER</td>
<td>QUARTERLY</td>
<td>GRAB</td>
</tr>
<tr>
<td>Lead, TR</td>
<td>µg/L</td>
<td>28.0</td>
<td>13.9</td>
<td>28.0, 13.9 INT</td>
<td>ONCE/MONTH</td>
<td>MONTHLY</td>
<td>GRAB</td>
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<tr>
<td>Lead, TR</td>
<td>µg/L</td>
<td>11.2</td>
<td>4.7</td>
<td>NEW, FIN</td>
<td>ONCE/MONTH</td>
<td>MONTHLY</td>
<td>GRAB</td>
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<tr>
<td>Mercury, Total</td>
<td>µg/L</td>
<td>2</td>
<td>1</td>
<td>SAME</td>
<td>ONCE/YEAR</td>
<td>ANNUALLY</td>
<td>GRAB</td>
</tr>
<tr>
<td>Zinc, TR</td>
<td>µg/L</td>
<td>272.0</td>
<td>128.5</td>
<td>SAME</td>
<td>ONCE/MONTH</td>
<td>MONTHLY</td>
<td>GRAB</td>
</tr>
<tr>
<td><strong>Nutrients</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Ammonia as N</td>
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<td></td>
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<td></td>
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<tr>
<td>Nitrogen, Total N (TN)</td>
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<td>REMOVED</td>
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<tr>
<td>Nitrogen, Total Kjeldahl</td>
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<td></td>
<td></td>
<td>REMOVED</td>
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</tr>
<tr>
<td>Nitrate plus Nitrite as N</td>
<td></td>
<td></td>
<td></td>
<td>REMOVED</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Phosphorus, Total P (TP)</td>
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<td></td>
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<td>REMOVED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong></td>
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<td></td>
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<tr>
<td>WET Test - Chronic</td>
<td>TUC</td>
<td>1.6</td>
<td>-</td>
<td>SAME</td>
<td>ONCE/QUARTER</td>
<td>QUARTERLY</td>
<td>GRAB</td>
</tr>
</tbody>
</table>

* monitoring and reporting requirement only
† report the minimum and maximum pH values; pH is not to be averaged
new parameter not established in previous state operating permit
int parameter requirements prior to end of SOC
fin parameter requirements at end of SOC
TR total recoverable

### Derivation and Discussion of Limits:

**Physical:**

**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. The facility will report the total flow in millions of gallons per day (MGD), monthly monitoring continued from previous permit.

**Conventional:**

**Cyanide Amenable to Chlorination**

Quarterly monitoring implemented in the permit based on facility comments prior to public notice. Detections of total cyanide suggest amenable cyanide may be present in the wastewater at this facility. Monitoring established to determine presence or absence of this pollutant.
pH
6.5 to 9.0 SU. The Water Quality Standard at 10 CSR 20-7.031(5)(e) states water contaminants shall not cause pH to be outside the range of 6.5 to 9.0 standard pH units. Technology based limitations are less stringent; WQS continued from previous permit as this facility adjusts the pH of the wastewater during treatment in the system.

Total Suspended Solids (TSS)
Technology based effluent limits from 40 CFR 440: 30 mg/L daily maximum; 20 mg/L monthly average. Continued from previous permit. There are no WQS for this parameter.

METALS:
Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the Technical Support Document For Water Quality-based Toxic Controls (EPA/505/2-90-001) and The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion (EPA 823-B-96-007). “Aquatic Life Protection” in 10 CSR 20-7.031 Tables A1 and A2, as well as general criteria protections in 10 CSR 20-7.015(1)(CC), and is reported in the calculations below. Additional use criterion (HHP, DWS, GRW, IRR, or LWW) may also be used, as applicable, to determine the most protective effluent limit for the receiving waterbody’s class and uses. Data for this facility suggest wet weather events may be reducing hardness levels in the tailings impoundment. Ongoing projects diverting additional stormwater away from the impoundment are expected to increase hardness levels. Because of the uncertainty of future effluent hardness at the facility, effluent limits were calculated using the ecoregion hardness value of 170 mg/L until further data are collected. Previous permit limits used the hardness of 204 mg/L. Only data from 1/2017 through 12/2019 were used to calculate effluent limits as the new treatment system came online January 2017.

Cadmium, Total Recoverable
2 µg/L daily maximum; 1 µg/L monthly average. Previous limits 0.9 µg/L daily maximum; 0.5 µg/L monthly average based on a hardness of 204 mg/L. See Part III, ANTIBACKSLIDING for more information. Water quality limits retained due to downstream non-attainment of in-stream cadmium standards per the 2015 sampling event and new treatment system coming online in 2017. Acute AQL: $e^{(1.0166 \times \ln 170 - 3.062490) \times (1.136672 - \ln 170 \times 0.041838)} = 7.982 \mu g/L$ [at hardness 170] Chronic AQL: $e^{(0.7977 \times \ln 170 - 3.909) \times (1.101672 - \ln 170 \times 0.041938)} = 1.07 \mu g/L$ [at hardness 170] TR Conversion: AQL/Translator = 7.982 / 0.922 = 8.659 [at hardness 170] TR Conversion: AQL/Translator = 1.07 / 0.887 = 1.207 [at hardness 170] LTaa: WLaa * LTaa multiplier = 8.659 * 0.303 = 2.625 [CV: 0.642, 99th %ile] LTAc: WLAc * LTAc multiplier = 1.207 * 0.507 = 0.612 [CV: 0.642, 99th %ile] use most protective LTa: 0.612 Daily Maximum: MDL = LTa * MDL multiplier = 0.612 * 3.298 = 2 µg/L [CV: 0.642, 99th %ile] Monthly Average: AML = LTa * AML multiplier = 0.612 * 1.593 = 1 µg/L [CV: 0.642, 95th %ile, n=4]

Copper, Total Recoverable
34.3 µg/L daily maximum; 21.1 µg/L monthly average continued from previous permit. Copper is a known pollutant of concern at this site and is identified in the ELG. To comply with anti-backsliding, WQS limits will remain in the permit.

Iron, Total Recoverable
Quarterly monitoring; new parameter. The facility reported 99.9 µg/L for this parameter. In-stream chronic water quality standard is 1000 µg/L. This facility uses a Co-Mag Ballasted Sedimentation process, installed in 2017, which relies on the magnetic properties of flocculants which contain iron. Under normal conditions, the facility retrieves up to 98% of the added flocculent in the magnet. To assure iron is not being discharged in quantities which would affect water quality, this permit contains monitoring. Regulations contained in 40 CFR §122.44 indicate NPDES permit limits are developed so they meet the more stringent of either technology-based effluent limitations, numerical, and/or narrative water quality standard-based effluent limits, or the previous permit. Sampling is required to assess the need to future technology or water quality-based effluent limitations.
**Lead, Total Recoverable**
10.1 µg/L daily maximum; 3.2 µg/L monthly average. The facility reported from 1.5 to 283 µg/L for this parameter; positive RP. The permit writer has provided a schedule of compliance for this parameter as the treatment plant may require optimization to meet these levels. More than one monthly sample may be required to meet the monthly average. Previous limits 28.0 µg/L daily maximum; 13.9 µg/L monthly average based on a hardness of 204 mg/L. Technology-based effluent limitations not protective of the receiving stream therefore were not used. See Part III, SCHEDULE OF COMPLIANCE and Part B of the permit for more information.

Acute AQL: $e^{(1.273 \times \ln 170 - 1.460448) \times (1.46203 - \ln 170 \times 0.145712)} = 114.446$ µg/L  
Chronic AQL: $e^{(1.273 \times \ln 170 - 4.704797) \times (1.46203 - \ln 170 \times 0.145712)} = 4.463$ µg/L  
TR Conversion: AQL/Translator = 114.446 / 0.714 = 160.36  
TR Conversion: AQL/Translator = 4.463 / 0.714 = 6.253  
LTAa: WLaa * LTaa multiplier = 160.36 * 0.229 = 36.709  
LTAc: WLAc * LTAc multiplier = 6.253 * 0.411 = 2.568  
use most protective LTA: 2.568  
Daily Maximum: MDL = LTA * MDL multiplier = 2.568 * 4.368 = 11.2 µg/L  
Monthly Average: AML = LTA * AML multiplier = 2.568 * 1.828 = 4.7 µg/L

**Mercury, Total Recoverable**
Required per Effluent Limitation Guideline (ELG) at 40 CFR 440, no reasonable potential therefore WQS are not applied; data reported were not detected. ELG limits apply: 2 µg/L daily maximum; 1 µg/L monthly average. Yearly sampling and reporting; continued from previous permit.

**Zinc, Total Recoverable**
272 µg/L daily maximum; 128.5 µg/L monthly average continued from previous permit. Zinc is a known pollutant of concern at this site and is identified in the ELG. To comply with anti-backsliding, WQS limits will remain in the permit.

**Nutrients:**
The permit writer determined that nutrient monitoring at outfall #002 is no longer required due to recent modeling which reported no RP by Doe Run for the Clearwater Lake Watershed.
OTHER:

**Whole Effluent Toxicity (WET) Test, Chronic**

1.6 TUc two species multiple dilution quarterly testing continued from the previous permit. The permit writer has determined reasonable potential exists for the discharge to cause toxicity within the receiving stream. A WET test is a quantifiable method to determine discharges from the facility cause toxicity to aquatic life by itself, in combination with, or through synergistic responses, when mixed with receiving stream water.

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 the provisions in 10 CSR 20-6 and the Water Quality Standards in 10 CSR 20-7 are being met. Under 10 CSR 20-6.010(8)(A)4, the Department may require other terms and conditions it deems necessary to assure compliance with the CWA and related regulations of the Missouri Clean Water Commission. The following Missouri Clean Water Laws (MCWL) apply: §644.051.3. requires the Department to set permit conditions complying 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); and §644.051.5. is the basic authority to require testing conditions. WET tests are required by all facilities meeting the following criteria:

- Facility is a designated a Major
- Facility has Water Quality-Based Effluent Limitations for toxic substances (other than NH₃)

WQS:  no toxics in toxic amounts [10 CSR 20-7.031(4)(J)2.B.] = 0.3 TUa, 1.0 TUc

Acute WLA:  \( C_e = 0.3 \text{ TUa} \times 10 = 3.0 \text{ TUa,c} \)  
   \( \text{[ACR: acute-to-chronic ratio = 10]} \)

(The acute WLA is converted to a long-term average concentration (LTAa,c) using: WLAa,c = WLAa \times ACR. A default acute to chronic ratio [ACR] value of 10 is used based on section 1.3.4 (page 18) and Appendix A of the March 1991 TSD.)

\( C_e = 1.0 \text{ TUa,c} \)

LTAa,c:  3.0 (0.321) = 0.963 TUa,c  
   \( \text{[CV = 0.6, 99th Percentile]} \)

LTAc:  1.0 (0.527) = 0.527 TUa,c  
   \( \text{[CV = 0.6, 99th Percentile]} \)

Use most protective number of LTA_a,c or LTA_c.

MDL:  0.527 (3.11) = 1.64 TUc  
   \( = 1.6 \text{ TUc} \)  
   \( \text{[CV = 0.6, 99th Percentile]} \)

The standard Allowable Effluent Concentration (AEC) for facilities discharging to streams without mixing considerations or lakes is 100%. The standard dilution series for facilities discharging to waterbodies without mixing considerations is 100%, 50%, 25%, 12.5%, & 6.25%.
OUTFALL #015 – INDUSTRIAL STORMWATER

EFFLUENT LIMITATIONS TABLE:

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>UNIT</th>
<th>DAILY MINIMUM</th>
<th>MONTHLY AVERAGE</th>
<th>PREVIOUS PERMIT LIMITS</th>
<th>MINIMUM SAMPLING FREQUENCY</th>
<th>MINIMUM REPORTING FREQUENCY</th>
<th>SAMPLE TYPE</th>
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<tbody>
<tr>
<td>PHYSICAL</td>
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</tr>
<tr>
<td>Precipitation</td>
<td>inches</td>
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<td>ONCE DAY</td>
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<td>MEASUREMENT</td>
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</tr>
<tr>
<td>pH (\dagger)</td>
<td>SU</td>
<td>*</td>
<td>-</td>
<td>SAME</td>
<td>ONCE DAY</td>
<td>MONTHLY</td>
<td>GRAB</td>
</tr>
<tr>
<td>Total Suspended Solids (TSS)</td>
<td>mg/L</td>
<td>*</td>
<td>-</td>
<td>SAME</td>
<td>ONCE DAY</td>
<td>MONTHLY</td>
<td>GRAB</td>
</tr>
<tr>
<td>METALS</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium, TR</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
<td>SAME</td>
<td>ONCE DAY</td>
<td>MONTHLY</td>
<td>GRAB</td>
</tr>
<tr>
<td>Copper, TR</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
<td>SAME</td>
<td>ONCE DAY</td>
<td>MONTHLY</td>
<td>GRAB</td>
</tr>
<tr>
<td>Lead, TR</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
<td>SAME</td>
<td>ONCE DAY</td>
<td>MONTHLY</td>
<td>GRAB</td>
</tr>
<tr>
<td>Mercury, Total</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
<td>SAME</td>
<td>ONCE DAY</td>
<td>MONTHLY</td>
<td>GRAB</td>
</tr>
<tr>
<td>Zinc, TR</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
<td>SAME</td>
<td>ONCE DAY</td>
<td>MONTHLY</td>
<td>GRAB</td>
</tr>
</tbody>
</table>

* monitoring and reporting requirement only
\(\dagger\) report the minimum and maximum pH values; pH is not to be averaged
TR total recoverable

DERIVATION AND DISCUSSION OF LIMITS:
According to the records the Department has reviewed, the basin has not discharged. During normal operations, the stormwater collected in the basin is pumped back to the tailings dam to receive treatment in the Co-Mag system. However, in accordance with a construction permit issued by the department, the basin was constructed to store the 1 in 10 year 24 hour catastrophic storm event, and in instances where the pumping capacity cannot keep up with the rainfall, discharges are then permissible.

PHYSICAL:

Precipitation
The facility shall report the precipitation occurring which caused the discharge, should a discharge occur.

CONVENTIONAL:

pH
Daily monitoring only when a chronic or catastrophic storm event occurs. Discharge permissible only under circumstances listed in special condition #15.

Total Suspended Solids (TSS)
Daily monitoring only when a chronic or catastrophic storm event occurs. Discharge permissible only under circumstances listed in special condition #15.

METALS:

Cadmium, Total Recoverable
Daily monitoring only when a chronic or catastrophic storm event occurs. Discharge permissible only under circumstances listed in special condition #15.

Copper, Total Recoverable
Daily monitoring only when a chronic or catastrophic storm event occurs. Discharge permissible only under circumstances listed in special condition #15.

Lead, Total Recoverable
Daily monitoring only when a chronic or catastrophic storm event occurs. Discharge permissible only under circumstances listed in special condition #15.
**Mercury, Total**
Daily monitoring only when a chronic or catastrophic storm event occurs. Discharge permissible only under circumstances listed in special condition #15.

**Zinc, Total Recoverable**
Daily monitoring only when a chronic or catastrophic storm event occurs. Discharge permissible only under circumstances listed in special condition #15.

**PART V. 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 all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year, http://dnr.mo.gov/env/wpp/cpp/docs/watershed-based-management.pdf. 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 two years old, such 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.

This permit will maintain synchronization by expiring the end of the 3rd quarter, 2024; issue permit for five years.

**PUBLIC NOTICE:**
The Department shall give public notice a draft permit has been prepared and its issuance is pending. http://dnr.mo.gov/env/wpp/permits/pn/index.html. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in or with water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

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

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

The Public Notice period for this operating permit was from December 18, 2020 to January 18, 2021. Responses to the Public Notice of this operating permit did not warrant a modification of the terms and conditions of this permit. The factsheet was revised to correct a discrepancy in the description of Outfall #015. Paragraph 5(d) on page 9 of the permit required Doe Run’s SWPPP should have a provision for providing training to all personnel involved in housekeeping, material handling, storage, and staging of all operational, maintenance, storage and cleaning areas. This language, believed to be too broad, and was modified to include specific supervisory personnel undergo training instead of all personnel.

**DATE OF FACT SHEET:** DECEMBER 6, 2020

**COMPLETED BY:**

KYLE O’ROURKE, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
(573) 526-1289
Kyle.O’Rourke@dnr.mo.gov
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; 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.

   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 to 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).

   **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.

   **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, or any other provision pursuant to sections 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)(iv) 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, 303, 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, or 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 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.
PART III – BIOSOLIDS AND SLUDGE FROM DOMESTIC TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

1. PART III Standard Conditions pertain to biosolids and sludge requirements under the Missouri Clean Water Law and regulations for domestic and municipal wastewater and also incorporates federal sludge disposal requirements under 40 CFR Part 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR Part 503 for domestic biosolids and sludge.

2. PART III Standard Conditions apply only to biosolids and sludge generated at domestic wastewater treatment facilities, including public owned treatment works (POTW) and privately owned facilities.

3. Biosolids and Sludge Use and Disposal Practices:
   a. The permittee is authorized to operate the biosolids and sludge generating, treatment, storage, use, and disposal facilities listed in the facility description of this permit.
   b. The permittee shall not exceed the design sludge/biosolids volume listed in the facility description and shall not use biosolids or sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
   c. For facilities operating under general operating permits that incorporate Standard Conditions PART III, the facility is authorized to operate the biosolids and sludge generating, treatment, storage, use and disposal facilities identified in the original operating permit application, subsequent renewal applications or subsequent written approval by the department.

4. Biosolids or Sludge Received from other Facilities:
   a. Permittees may accept domestic wastewater biosolids or sludge from other facilities as long as the permittee’s design sludge capacity is not exceeded and the treatment facility performance is not impaired.
   b. The permittee shall obtain a signed statement from the biosolids or sludge generator or hauler that certifies the type and source of the sludge.

5. Nothing in this permit precludes the initiation of legal action under local laws, except to the extent local laws are preempted by state law.

6. This permit does not preclude the enforcement of other applicable 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 biosolids or sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act or under Chapter 644 RSMo.

8. In addition to Standard Conditions PART III, the Department may include biosolids and sludge limitations in the special conditions portion or other sections of a site specific permit.

9. Exceptions to Standard Conditions PART III may be authorized on a case-by-case basis by the Department, as follows:
   b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR Part 503.
SECTION B – DEFINITIONS

1. Best Management Practices are practices to prevent or reduce the pollution of waters of the state and include agronomic loading rates (nitrogen based), soil conservation practices, spill prevention and maintenance procedures 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, feed 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 Part 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 (PSRP) in accordance with 40 CFR Part 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. Feed crops are crops produced primarily for consumption by animals.
8. Fiber crops are crops such as flax and cotton.
9. Food crops are crops consumed by humans which include, but is not limited to, fruits, vegetables and tobacco.
10. Industrial wastewater means any wastewater, also known as process wastewater, not defined as domestic wastewater. Per 40 CFR Part 122.2, process wastewater 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. Land application of industrial wastewater, residuals or sludge is not authorized by Standard Conditions PART III.
11. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological contact systems, and other similar facilities. It does not include wastewater treatment lagoons or constructed wetlands for wastewater treatment.
12. Plant Available Nitrogen (PAN) is nitrogen that will be available to plants during the growing seasons after biosolids application.
13. 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.
14. 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), sewage sludge incinerator ash, or grit/screenings generated during preliminary treatment of domestic sewage.
15. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen or concrete lined 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.
16. Septage is the sludge pumped from residential septic tanks, cesspools, portable toilets, Type III marine sanitation devices, or similar treatment works such as sludge holding structures from residential wastewater treatment facilities with design populations of less than 150 people. Septage does not include grease removed from grease traps at a restaurant or material removed from septic tanks and other similar treatment works that have received industrial wastewater. The standard for biosolids from septage is different from other sludges. See Section H for more information.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Biosolids or sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and the requirements of Standard Conditions PART III or in accordance with Section A.3.c., above.
2. The permittee shall operate storage and treatment facilities, as defined by Section 644.016(23), RS Mo, so that there is no biosolids or sludge discharged to waters of the state. Agricultural storm water discharges are exempt under the provisions of Section 644.059, RS Mo.
3. Mechanical treatment plants shall have separate biosolids or sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove biosolids or sludge from these storage compartments on the required design schedule is a violation of this permit.

SECTION D – BIOSOLIDS OR SLUDGE DISPOSED AT OTHER TREATMENT FACILITY OR BY CONTRACT HAULER

1. Permitees that use contract haulers, under the authority of their operating permit, to dispose of biosolids or sludge, are responsible for compliance with all the terms of this permit. Contract haulers that assume the responsibility of the final disposal of biosolids or sludge, including biosolids land application, must obtain a Missouri State Operating Permit unless the hauler transports the biosolids or sludge to another permitted treatment facility.
2. Testing of biosolids or sludge, other than total solids content, is not required if biosolids or sludge are hauled to a permitted wastewater treatment facility, unless it is required by the accepting facility.
**SECTION E – INCINERATION OF SLUDGE**

1. Please be aware that sludge incineration facilities may be subject to the requirements of 40 CFR Part 503 Subpart E, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.

2. Permitee 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, mass of sludge incinerated and mass of ash generated. Permitee shall also provide the name of the ash disposal facility and permit number if applicable.

**SECTION F – SURFACE DISPOSAL SITES AND BIOSOLIDS AND SLUDGE LAGOONS**

1. Please be aware that surface disposal sites of biosolids or sludge from wastewater treatment facilities may be subject to other laws including the requirements in 40 CFR Part 503 Subpart C, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.

2. Biosolids or 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 biosolids or sludge storage lagoons as storage facilities, accumulated biosolids or 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 biosolids or sludge removed will be dependent on biosolids or sludge generation and accumulation in the facility. Enough biosolids or 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 biosolids or sludge on the bottom of the lagoon, upon prior approval of the Department; or
   b. Permittee shall close the lagoon in accordance with Section I.

**SECTION G – LAND APPLICATION OF BIOSOLIDS**

1. The permittee shall not land apply biosolids unless land application is authorized in the facility description, the special conditions of the issued NPDES permit, or in accordance with Section A.3.c., above.

2. This permit only authorizes “Class A” or “Class B” biosolids derived from domestic wastewater 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.

3. Class A Biosolids Requirements: Biosolids shall meet Class A requirements for application to public contact sites, residential lawns, home gardens or sold and/or given away in a bag or other container.

4. Class B biosolids that are land applied to agricultural and public contact sites shall comply with the following restrictions:
   a. Food crops that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.
   b. Food crops below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for four months or longer prior to incorporation into the soil.
   c. Food crops below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than four months prior to incorporation into the soil.
   d. Animal grazing shall not be allowed for 30 days after application of biosolids.
   e. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.
   f. Turf shall not be harvested for one year after application of biosolids if used for lawns or high public contact sites in close proximity to populated areas such as city parks or golf courses.
   g. After Class B biosolids have been land applied to public contact sites with high potential for public exposure, as defined in 40 CFR § 503.31, such as city parks or golf courses, access must be restricted for 12 months.
   h. After Class B biosolids have been land applied public contact sites with low potential for public exposure as defined in 40 CFR § 503.31, such as a rural land application or reclamation sites, access must be restricted for 30 days.

5. Pollutant limits
   a. Biosolids shall be monitored to determine the quality for regulated pollutants listed in Table 1, below. Limits for any pollutants not listed below may be established in the permit.
   b. The number of samples taken is directly related to the amount of biosolids or sludge produced by the facility (See Section J, below). 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 achieve pollutant concentration below those identified in Table 1, below.
   c. Table 1 gives the ceiling concentration for biosolids. Biosolids which exceed the concentrations in Table 1 may not be land applied.
Table 1: Biosolids ceiling concentration

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Milligrams per kilogram dry weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>75</td>
</tr>
<tr>
<td>Cadmium</td>
<td>85</td>
</tr>
<tr>
<td>Copper</td>
<td>4,300</td>
</tr>
<tr>
<td>Lead</td>
<td>840</td>
</tr>
<tr>
<td>Mercury</td>
<td>57</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>75</td>
</tr>
<tr>
<td>Nickel</td>
<td>420</td>
</tr>
<tr>
<td>Selenium</td>
<td>100</td>
</tr>
<tr>
<td>Zinc</td>
<td>7,500</td>
</tr>
</tbody>
</table>

d. Table 2 below gives the low metal concentration for biosolids. Because of its higher quality, biosolids with pollutant concentrations below those listed in Table 2 can safely be applied to agricultural land, forest, public contact sites, lawns, home gardens or be given away without further analysis. Biosolids containing metals in concentrations above the low metals concentrations but below the ceiling concentration limits may be land applied but shall not exceed the annual loading rates in Table 3 and the cumulative loading rates in Table 4. The permittee is required to track pollutant loading onto application sites for parameters that have exceeded the low metal concentration limits.

Table 2: Biosolids Low Metal Concentration

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Milligrams per kilogram dry weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>41</td>
</tr>
<tr>
<td>Cadmium</td>
<td>39</td>
</tr>
<tr>
<td>Copper</td>
<td>1,500</td>
</tr>
<tr>
<td>Lead</td>
<td>300</td>
</tr>
<tr>
<td>Mercury</td>
<td>17</td>
</tr>
<tr>
<td>Nickel</td>
<td>420</td>
</tr>
<tr>
<td>Selenium</td>
<td>100</td>
</tr>
<tr>
<td>Zinc</td>
<td>2,800</td>
</tr>
</tbody>
</table>

e. Annual pollutant loading rate.

Table 3: Biosolids Annual Loading Rate

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Kg/ha (lbs./ac) per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>2.0 (1.79)</td>
</tr>
<tr>
<td>Cadmium</td>
<td>1.9 (1.70)</td>
</tr>
<tr>
<td>Copper</td>
<td>75 (66.94)</td>
</tr>
<tr>
<td>Lead</td>
<td>15 (13.39)</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.85 (0.76)</td>
</tr>
<tr>
<td>Nickel</td>
<td>21 (18.74)</td>
</tr>
<tr>
<td>Selenium</td>
<td>5.0 (4.46)</td>
</tr>
<tr>
<td>Zinc</td>
<td>140 (124.96)</td>
</tr>
</tbody>
</table>

f. Cumulative pollutant loading rates.

Table 4: Biosolids Cumulative Pollutant Loading Rate

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Kg/ha (lbs./ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>41 (37)</td>
</tr>
<tr>
<td>Cadmium</td>
<td>39 (35)</td>
</tr>
<tr>
<td>Copper</td>
<td>1500 (1339)</td>
</tr>
<tr>
<td>Lead</td>
<td>300 (268)</td>
</tr>
<tr>
<td>Mercury</td>
<td>17 (15)</td>
</tr>
<tr>
<td>Nickel</td>
<td>420 (375)</td>
</tr>
<tr>
<td>Selenium</td>
<td>100 (89)</td>
</tr>
<tr>
<td>Zinc</td>
<td>2800 (2499)</td>
</tr>
</tbody>
</table>

6. Best Management Practices. The permittee shall use the following best management practices during land application activities to prevent the discharge of biosolids to waters of the state.
   a. Biosolids shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under § 4 of the Endangered Species Act or its designated critical habitat.
   b. Apply biosolids only at the agronomic rate of nitrogen needed (see 5.c. of this section).
   c. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop
nitrogen removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.

i. PAN can be determined as follows:

\[(\text{Nitrate + nitrite nitrogen}) + (\text{organic nitrogen} \times 0.2) + (\text{ammonia nitrogen} \times \text{volatilization factor})\].

Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volatilization factors and mineralization rates can be utilized on a case-by-case basis.

ii. Crop nutrient production/removal to be based on crop specific nitrogen needs and realistic yield goals. NOTE: There are a number of reference documents on the Missouri Department of Natural Resources website that are informative to implement best management practices in the proper management of biosolids, including crop specific nitrogen needs, realistic yields on a county by county basis and other supporting references.

iii. Biosolids that are applied at agronomic rates shall not cause the annual pollutant loading rates identified in Table 3 to be exceeded.

d. Buffer zones are as follows:

i. 300 feet of a water supply well, sinkhole, 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 of dwellings or public use areas;

iv. 100 feet (35 feet if biosolids application is down-gradient or the buffer zone is entirely vegetated) of lake, pond, wetlands or gaining streams (perennial or intermittent);

v. 50 feet of a property line. Buffer distances from property lines may be waived with written permission from neighboring property owner.

vi. For the application of dry, cake or liquid biosolids that are subsurface injected, buffer zones identified in 5.d.i. through 5.d.iii above, may be reduced to 35 feet if the buffer zone is permanently vegetated. Subsurface injection does not include methods or technology reflective of combination surface/shallow soil incorporation.

e. Slope limitation for application sites are as follows:

i. For slopes less than or equal to 6 percent, 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 percent, 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.

iv. Dry, cake or liquid biosolids that are subsurface injected, may be applied on slopes not to exceed 20 percent. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation.

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

g. Biosolids may be land applied to sites with soil that are snow covered, frozen, or saturated with liquid when site restrictions or other controls are provided to prevent pollutants from being discharged to waters of the state during snowmelt or stormwater runoff. During inclement weather or unfavorable soil conditions use the following management practices:

i. A maximum field slope of 6% and a minimum 300 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be utilized for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation;

ii. A maximum field slope of 2% and 100 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be utilized for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation;

iii. Other best management practices approved by the Department.
SECTION I– CLOSURE REQUIREMENTS

1. Haulers that land apply septage must obtain a state permit. An operating permit is not required for septage haulers who transport septage to another permitted treatment facility for disposal.

2. Do not apply more than 30,000 gallons of septage per acre per year or the volume otherwise stipulated in the operating permit.

3. Septic 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 mechanical treatment facilities.

4. Septage must comply with Class B biosolids regarding pathogen and vector attraction reduction requirements before it may be applied to crops, pastures or timberland. To meet required pathogen and vector reduction requirements, mix 50 pounds of hydrated lime for every 1,000 gallons of septage and maintain a septage pH of at least 12 pH standard units for 30 minutes or more prior to application.

5. 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.

6. As residential septage contains relatively low levels of metals, the testing of metals in septage is not required.

SECTION H– SEPTAGE

1. When closing a mechanical wastewater plant, all biosolids or sludge must be cleaned out and disposed of in accordance with Lagoon and earthen structure closure activities shall obtain a storm water permit for land disturbance activities that are approved. 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 stormwater and provide adequate surface water drainage without creating erosion. Alternative biosolids or sludge and soil mixing ratios may be included in the closure plan for department consideration.

2. Testing for metals or 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.

3. 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. Alternative, site-specific application rates may be included in the closure plan for department consideration.

4. Domestic wastewater treatment lagoons with a design treatment capacity less than or equal to 150 persons, are “similar treatment works” under the definition of septage. Therefore the sludge within the lagoons may be treated as septage during closure activities. See Section B, above. Under the septage category, residuals may be left in place as follows:

a. Biosolids and sludge shall meet the monitoring and land application limits for agricultural rates as referenced in Section G, above.

b. If the 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.

5. Bio solids or sludge left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, and unless otherwise approved, 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. Alternative biosolids or sludge and soil mixing ratios may be included in the closure plan for department consideration.

6. Lagoon and earthen structure 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 plant, all biosolids or 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. Alternative biosolids or sludge and soil mixing ratios may be included in the closure plan for department consideration.
SECTION J – MONITORING FREQUENCY

1. At a minimum, biosolids or sludge 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>
<thead>
<tr>
<th>Biosolids or Sludge produced and disposed (Dry Tons per Year)</th>
<th>Monitoring Frequency (See Notes 1, and 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>319 or less</td>
<td>1/week</td>
</tr>
<tr>
<td>320 to 1650</td>
<td>4/month</td>
</tr>
<tr>
<td>1651 to 16,500</td>
<td>6/month</td>
</tr>
<tr>
<td>16,501+</td>
<td>12/month</td>
</tr>
</tbody>
</table>

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: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

2. Permittees that operate wastewater treatment lagoons, peak flow equalization basins, combined sewer overflow basins or biosolids or sludge lagoons that are cleaned out once a year or less, may choose to sample only when the biosolids or sludge is removed or the lagoon is closed. Test one composite sample for each 319 dry tons of biosolids or sludge removed from the lagoon during the reporting year or during lagoon closure. 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.

4. Biosolids and sludge monitoring shall be conducted in accordance with federal regulation 40 CFR § 503.8, Sampling and analysis.

SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in Standard Conditions PART III and any additional items in the Special Conditions section of this permit. This shall include dates when the biosolids or sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.

2. Reporting period
   a. By February 19th of each year, applicable facilities shall submit an annual report for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and biosolids or sludge disposal facilities.
   b. Permittees with wastewater treatment lagoons shall submit the above annual report only when biosolids or sludge are removed from the lagoon during the report period or when the lagoon is closed.

3. Report Form. The annual report shall be prepared on report forms provided by the Department or equivalent forms approved by the Department.

4. Reports shall be submitted as follows:
   a. Major facilities, which are those serving 10,000 persons or more or with a design flow equal to or greater than 1 million gallons per day or that are required to have an approved pretreatment program, shall report to both the Department and EPA if the facility land applied, disposed of biosolids by surface disposal, or operated a sewage sludge incinerator. All other facilities shall maintain their biosolids or sludge records and keep them available to Department personnel upon request. State reports shall be submitted to the address listed as follows:
      DNR regional or other applicable office listed in the permit (see cover letter of permit)
      ATTN: Sludge Coordinator
5. Annual report contents. The annual report shall include the following:

a. Biosolids and sludge testing performed. If testing was conducted at a greater frequency than what is required by the permit, all test results must be included in the report.

b. Biosolids or sludge quantity shall be reported as dry tons for the quantity produced and/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 and 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 using a 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 biosolids or sludge 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 landowner’s 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. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
   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 and phosphorus. If no soil was tested during the year, report the last date when tested and the results.
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
FORM A – APPLICATION FOR NONDOMESTIC PERMIT UNDER MISSOURI
CLEAN WATER LAW

PLEASE READ ALL THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.
SUBMITTAL OF AN INCOMPLETE APPLICATION MAY RESULT IN THE APPLICATION BEING RETURNED.

IF YOUR FACILITY IS ELIGIBLE FOR A NO EXPOSURE EXEMPTION:
Fill out the No Exposure Certification Form (Mo 780-2828): https://dnr.mo.gov/forms/780-2828-f.pdf

1. REASON FOR APPLICATION:

☐ a. This facility is now in operation under Missouri State Operating Permit (permit) MO – 0001881, is submitting an application for renewal, and there is no proposed increase in design wastewater flow. Annual fees will be paid when invoiced and there is no additional permit fee required for renewal.

☐ b. This facility is now in operation under permit MO – ____________, is submitting an application for renewal, and there is a proposed increase in design wastewater flow. Antidegradation Review may be required. Annual fees will be paid when invoiced and there is no additional permit fee required for renewal.

☐ c. This is a facility submitting an application for a new permit (for a new facility). Antidegradation Review may be required. New permit fee is required.

☐ d. This facility is now in operation under Missouri State Operating Permit (permit) MO – ____________, and is requesting a modification to the permit. Antidegradation Review may be required. Modification fee is required.

2. FACILITY

<table>
<thead>
<tr>
<th>NAME</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Doe Run Company- Sweetwater Mine/Mill</td>
<td>573-689-2251</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDRESS (PHYSICAL)</th>
<th>CITY</th>
<th>STATE</th>
<th>ZIP CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1382 Sweetwater Mine Road</td>
<td>Ellington</td>
<td>MO</td>
<td>63638</td>
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</table>

3. OWNER

<table>
<thead>
<tr>
<th>NAME</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Doe Run Resources Corporation d/b/a The Doe Run Company</td>
<td>573-244-8650</td>
</tr>
</tbody>
</table>

| EMAIL ADDRESS | |
|---------------||
| sanderson@doerun.com | |

<table>
<thead>
<tr>
<th>ADDRESS (MAILING)</th>
<th>CITY</th>
<th>STATE</th>
<th>ZIP CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO Box 600</td>
<td>Viburnum</td>
<td>MO</td>
<td>65566</td>
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</table>

4. CONTINUING AUTHORITY

<table>
<thead>
<tr>
<th>NAME</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Doe Run Resources Corporation d/b/a The Doe Run Company</td>
<td>573-244-8650</td>
</tr>
</tbody>
</table>

| EMAIL ADDRESS | |
|---------------||
| sanderson@doerun.com | |

<table>
<thead>
<tr>
<th>ADDRESS (MAILING)</th>
<th>CITY</th>
<th>STATE</th>
<th>ZIP CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO Box 600</td>
<td>Viburnum</td>
<td>MO</td>
<td>65566</td>
</tr>
</tbody>
</table>

5. OPERATOR CERTIFICATION

<table>
<thead>
<tr>
<th>NAME</th>
<th>CERTIFICATE NUMBER</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same As Owner</td>
<td></td>
<td>573-244-8650</td>
</tr>
</tbody>
</table>

6. FACILITY CONTACT

<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samantha Anderson</td>
<td>Env Compliance Manager</td>
<td>573-244-8650</td>
</tr>
</tbody>
</table>

| EMAIL ADDRESS | |
|---------------||
| sanderson@doerun.com | |

7. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary.

<table>
<thead>
<tr>
<th>NAME</th>
<th>CITY</th>
<th>STATE</th>
<th>ZIP CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sutterfield Homestead LLC, C/O Rhonda Stansberry</td>
<td>Omaha</td>
<td>NE</td>
<td>68106</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDRESS</th>
<th>MO 780-1470 (02-19)</th>
</tr>
</thead>
</table>
8. ADDITIONAL FACILITY INFORMATION

8.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)
For Universal Transverse Mercator (UTM), use Zone 15 North referenced to North American Datum 1983 (NAD83)

<table>
<thead>
<tr>
<th>Unit</th>
<th>UTM Coordinates Easting (X)</th>
<th>UTM Coordinates Northing (Y)</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>04</td>
<td>664251</td>
<td>4136485</td>
</tr>
<tr>
<td>002</td>
<td>04</td>
<td>665409</td>
<td>4136720</td>
</tr>
<tr>
<td>003</td>
<td>04</td>
<td>663589</td>
<td>4136127</td>
</tr>
</tbody>
</table>

8.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.
Primary SIC 1031 and NAICS 212231
SIC 1031 and NAICS 212231

9. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION

A. Is this permit for a manufacturing, commercial, mining, solid/hazardous waste, or silviculture facility? YES ☐ NO ☐
   If yes, complete Form C.  

B. Is the facility considered a “Primary Industry” under EPA guidelines (40 CFR Part 122, Appendix A) : YES ☐ NO ☐
   If yes, complete Forms C and D.  

C. Is wastewater land applied? YES ☐ NO ☐
   If yes, complete Form I.  

D. Are sludge, biosolids, ash, or residuals generated, treated, stored, or land applied? YES ☐ NO ☐
   If yes, complete Form R.  

E. Have you received or applied for any permit or construction approval under the CWA or any other environmental regulatory authority? YES ☐ NO ☐
   If yes, please include a list of all permits or approvals for this facility.

F. Do you use cooling water in your operations at this facility? YES ☐ NO ☐
   If yes, indicate the source of the water:

G. Attach a map showing all outfalls and the receiving stream at 1” = 2,000’ scale.

10. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data. One of the following must be checked in order for this application to be considered complete. Please visit http://dnr.mo.gov/env/wpp/edmr.htm to access the Facility Participation Package.

☐ - You have completed and submitted with this permit application the required documentation to participate in the eDMR system.
✓ - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.
☐ - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

11. FEES

Permit fees may be paid by attaching a check, or online by credit card or eCheck through the JetPay system. Use the URL provided to access JetPay and make an online payment: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/

12. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)
Samantha Anderson, Environmental Compliance Manager

SIGNATURE

TELEPHONE NUMBER WITH AREA CODE
573-244-8650

DATE SIGNED
3/19/2019

MO-700-1479 (02/19)
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
FORM C – APPLICATION FOR DISCHARGE PERMIT
MANUFACTURING, COMMERCIAL, MINING,
SILVICULTURE OPERATIONS, PROCESS AND STORMWATER

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

1.00 NAME OF FACILITY
The Doe Run Company - Sweetwater Mine/Mill

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER
MO-0001881

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).
N/A

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

   A. FIRST  1031
   B. SECOND
   C. THIRD
   D. FOURTH

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

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

   001 NW1/4 SE1/4 Sec 22 T 31N R 2W Reynolds County
   002 NE1/4 SW1/4 Sec 23 T 31N R 2W Reynolds County
   015 SE1/4 SW1/4 Sec 22 T 31N R 2W Reynolds County

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

   OUTFALL NUMBER (LIST)   RECEIVING WATER

   001   None
   002   Adair Creek
   015   Tributary to Sweetwater Creek

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

Mining and Milling of Ores
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?

<table>
<thead>
<tr>
<th>1. OUTFALL NUMBER (lis)</th>
<th>2. OPERATION(S) CONTRIBUTING FLOW (lis)</th>
<th>3. FREQUENCY</th>
<th>4. FLOW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A. DAYS PER WEEK (specify average)</td>
<td>B. MONTHS PER YEAR (specify average)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. LONG TERM AVERAGE</td>
<td>2. MAXIMUM DAILY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. MAXIMUM AVERAGE</td>
<td>C. DURATION (in days)</td>
</tr>
</tbody>
</table>

2.50 MAXIMUM PRODUCTION

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

| YES (COMPLETE B.) | NO (GO TO SECTION 2.60) |

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

| YES (COMPLETE C.) | NO (GO TO SECTION 2.60) |

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

<table>
<thead>
<tr>
<th>1. MAXIMUM QUANTITY</th>
<th>2. AFFECTED OUTFALLS (lis outfall numbers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. QUANTITY PER DAY</td>
<td>B. UNITS OF MEASURE</td>
</tr>
</tbody>
</table>

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 2.60) |

<table>
<thead>
<tr>
<th>1. IDENTIFICATION OF CONDITION AGREEMENT, ETC.</th>
<th>2. AFFECTED OUTFALLS</th>
<th>3. BRIEF DESCRIPTION OF PROJECT</th>
<th>4. FINAL COMPLIANCE DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refer to Multi-media Consent Decree: U.S. and State of Mo. vs. Doe Run</td>
<td>Construction complete, but CD not closed.</td>
<td>A. REQUIRED</td>
<td>B. PROJECTED</td>
</tr>
</tbody>
</table>

B. OPTIONAL: YOU MAY ATTACH ADDITIONAL SHEETS DESCRIBING ANY ADDITIONAL WATER POLLUTION CONTROL PROGRAMS (OR OTHER ENVIRONMENTAL PROJECTS WHICH MAY AFFECT YOUR DISCHARGES) YOU NOW HAVE UNDER WAY OR WHICH YOU PLAN TO IMPLEMENT CONDITIONS, ADMINISTRATIVE OR ENFORCEMENT ORDERS, ENFORCEMENT COMPLIANCE SCHEDULE LETTERS, STIPULATIONS, COURT ORDERS AND GRANT OR LOAN CONDITIONS.

MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.
Pimphales promelas and Ceriodaphnia dubia, Special Condition 14 of MO-0001848

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

<table>
<thead>
<tr>
<th>A. NAME</th>
<th>B. ADDRESS</th>
<th>C. TELEPHONE (area code and number)</th>
<th>D. POLLUTANTS ANALYZED (list)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pace Analytical Services, Inc.</td>
<td>808 West McKay Fronenac, KS 66763</td>
<td>620-235-0003</td>
<td>WET Testing, Fecal</td>
</tr>
<tr>
<td>Pace Analytical Services, Inc.</td>
<td>9608 Loret Blvd. Lenexa, KS 66219</td>
<td>913-599-5655</td>
<td>Chemical Analysis</td>
</tr>
</tbody>
</table>

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) Samantha Anderson, Environmental Compliance manager

TELEPHONE NUMBER WITH AREA CODE (573) 244-8650

DATE SIGNED 03/19/2019