STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

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

Permit No.	MO-0001856
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:	The Doe Run Company – Fletcher Mine/Mill
Facility Address:	230 County Road 849, Centerville, MO 63633
Legal Description:	See following page
UTM Coordinates:	See following page
Receiving Stream:	See following page
First Classified Stream and ID:	See following page
USGS Basin & Sub-watershed No.:	Bee Fork (11010007-0102)

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

FACILITY DESCRIPTION

SIC # 1031; NAICS # 212231
Mining and milling of copper, lead, and zinc ores. See following page.

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

May 1, 2019
Effective Date

Edward B. Galbraith, Director, Department of Natural Resources

April 30, 2024
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (CONTINUED)

OUTFALL #001 – SIC #1031; NAICS # 212231
Former Fletcher Mine water clarification basin – currently only stormwater; standpipe from the middle of the lake flows to outfall #001

Legal Description:	NE ¼, SE ¼, Sec. 24, T32N, R2W, Reynolds County
UTM Coordinates:	X = 667409, Y = 4146420
Receiving Stream:	8-20-13 MUDD V1.0
First Classified Stream and ID:	8-20-13 MUDD V1.0 (C) WBID # 3960
USGS Basin & Sub-watershed No.:	Bee Fork (11010007-0102)
Average Flow:	6.31 MGD
Maximum flow	13.1 MGD

Flows dependent upon precipitation but are fundamentally constant due to a seep.

OUTFALL #002 – SIC #1031; NAICS # 212231
No. 46 Lake; tailings impoundment emergency spillway; discharge will occur during high volume precipitation events

Legal Description:	NE ¼, SW ¼, Sec. 19, T32N, R1W, Reynolds County
UTM Coordinates:	X = 668249, Y = 4147622
Receiving Stream:	8-20-13 MUDD V1.0
First Classified Stream and ID:	8-20-13 MUDD V1.0 (C) WBID # 3960
USGS Basin & Sub-watershed No.:	Bee Fork (11010007-0102)
Average Flow:	0.44 MGD
Maximum Flow:	0.54 MGD

Flows dependent upon precipitation.

OUTFALL #003 – SIC #1031; NAICS # 212231
No. 46 Lake toe drain basin overflow: toe drainage from tailings impoundment dam; under normal conditions basin water is pumped back into the tailings impoundment; power loss will cause discharge

Legal Description:	SW ¼, SW ¼, Sec. 19, T32N, R1W, Reynolds County
UTM Coordinates:	X = 668174, Y = 4146001
Receiving Stream:	8-20-13 MUDD V1.0
First Classified Stream and ID:	8-20-13 MUDD V1.0 (C) WBID # 3960
USGS Basin & Sub-watershed No.:	Bee Fork (11010007-0102)
Average Flow:	0.16 MGD
Maximum Flow:	0.24 MGD

Flows dependent upon precipitation.

All outfalls discharge to different newly classified MUDD streams. Each stream connects to Bee Fork WBID #2760 (C), 303(d) downstream.

Domestic wastewater is treated on-site using a sub-surface septic system.

All process wastewater is sent to the West Fork Facility via pipeline for treatment and discharge at West Fork; MO-0100218.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALLS #001, #002, #003 Flow ≤ 0.1 MGD	**TABLE A-1 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**			
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **May 1, 2019** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:				
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: LF					
PHYSICAL					
Flow	MGD	*	*	once/week	24 hr. total
CONVENTIONAL					
pH Ω	SU	6.5 to 9.0	6.5 to 9.0	once/month	grab
Total Suspended Solids	mg/L	30	20	once/month	grab
METALS					
Cadmium, Total Recoverable	µg/L	1.0	0.5	once/month	grab
Copper, Total Recoverable	µg/L	29.0	12.0	once/month	grab
Lead, Total Recoverable	µg/L	23.0	11.5	once/month	grab
Nickel, Total Recoverable	µg/L	*	*	once/month	grab
Zinc, Total Recoverable	µg/L	275.5	137.3	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE JUNE 28, 2019. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					
LIMIT SET: WC					
Whole Effluent Toxicity, Chronic See Special Condition #2	TU_c	1.6		once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED YEARLY; THE FIRST REPORT IS DUE JANUARY 28, 2020.					

OUTFALLS #001, #002, #003 Flow > 0.1 MGD	**Table A-2 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**			
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **May 1, 2019** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:				
EFFLUENT PARAMETERS	UNITS	FINAL LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: HF					
PHYSICAL					
Flow	MGD	*	-	once/week	24 Hr Est.
CONVENTIONAL					
pH Ω	SU	6.5-9.0	-	once/month	grab
Total Suspended Solids	mg/L	30	-	once/month	grab
METALS					
Cadmium, Total Recoverable	µg/L	13.8	-	once/month	grab
Copper, Total Recoverable	µg/L	29.0	-	once/month	grab
Lead, Total Recoverable	µg/L	361	-	once/month	grab
Nickel, Total Recoverable	µg/L	*	-	once/month	grab
Zinc, Total Recoverable	µg/L	226	-	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE JUNE 28, 2019. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					

* Monitoring requirement only.

Ω The facility will report the minimum and maximum values. pH is not to be averaged.

B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Part I and Part III standard conditions dated August 1, 2014 and March 1, 2015, respectively, and hereby incorporated as though fully set forth herein.

C. SPECIAL CONDITIONS

1. The facility shall monitor flows weekly and shall sample in accordance with Table A-1 when the flow is less than or equal to (≤) 0.1 MGD. The facility shall obtain a sample in accordance with Table A-2 when the flow is greater than (>) 0.1 MGD. If all monitored flows within a month are within one flow tier (Table A-1or A-2), then only one sample per month is required. If monitored flows within a month are in different flow tiers, the facility shall collect (at least) one sample for each flow tier; (at a minimum) one for Table A-1, and (at a minimum) one for Table A-2. The average for each table will only be calculated using qualifying flows for that table.

2. Outfall #001 only: 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 ($TU_c = 100/IC_{25}$) 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 (IC_{25}) 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 TU_c 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 TU_c. This permit requires the following additional toxicity testing if any one test result exceeds a TU_c limit. The facility shall not sample for WET when flows are >0.1 MGD.
      (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 TU_c limit and once every two weeks thereafter (under qualifying flow regime outlined on Table A-1), until one of the following conditions are met:
         i. Three consecutive multiple-dilution tests are below the TU_c limit. No further tests need to be performed until next regularly scheduled test period.
         ii. A total of three multiple-dilution tests exceed the TU_c 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 TU_c limit.
   (h) TIE/TRE Trigger: The following shall apply upon the exceedance of the TU_c 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 TU_c 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.

C. SPECIAL CONDITIONS (CONTINUED)

3. Electronic Discharge Monitoring Report (eDMR) Submission System.
   (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
   (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data: Any additional report required by the permit excluding bypass reporting. After such a system has been made available by the Department, required data shall be directly input into the system by the next report due date.
   (c) Other actions. The following shall be submitted electronically after such a system has been made available by the Department:
      (1) General Permit Applications/Notices of Intent to discharge (NOIs);
      (2) Notices of Termination (NOTs);
      (3) No Exposure Certifications (NOEs);
      (4) Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs); and
      (5) Bypass reporting.
   (d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.
   (e) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: 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. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.

4. The facility's SIC code(s) or description is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) hence shall implement a Stormwater Pollution Prevention Plan (SWPPP) which must be prepared and implemented upon permit issuance. The SWPPP must be kept on-site and should not be sent to the Department unless specifically requested. The SWPPP must be reviewed and updated every five years or as site conditions change. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in: *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 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 preventing pollution [10 CSR 20-2.010(56)] of waters of the state. Corrective action means the facility took steps 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 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 must be reported to the regional office within seven (7) days of discovery. 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. The permittee will work with the regional office to determine the best course of action, including but not limited to 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.
      v. 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 and EPA personnel upon request. Electronic versions of the documents are acceptable.
   (c) A provision for designating an individual to be responsible for environmental matters.
   (d) A provision for providing training to all personnel involved in 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.

C. SPECIAL CONDITIONS (CONTINUED)

5. Permittee shall adhere to the following minimum Best Management Practices (BMPs):
   (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of stormwater from these substances.
   (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
   (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to 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. Any spills should be noted in the SWPPP.
   (d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
   (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property to comply with general water quality criteria, effluent limits, or benchmarks. This could include the use of straw bales, silt fences, or sediment basins, if needed.
   (f) Ensure adequate provisions are provided to prevent to protect embankments from erosion.

6. To protect the general criteria found at 10 CSR 20-7.031(4), before releasing water accumulated in secondary containment areas, it must be examined for hydrocarbon odor and presence of sheen. If the presence of odor or sheen is indicated, the water shall be treated using an appropriate method or disposed of in accordance with legally approved methods, such as being sent to a wastewater treatment facility. Following treatment, the water shall be tested for oil and grease, benzene, toluene, ethylbenzene, and xylene using 40 CFR part 136 methods. All pollutant levels must be below the most protective, applicable standards for the receiving stream, found in 10 CSR 20-7.031 Table A. Records of all testing and treatment of water accumulated in secondary containment shall be stored in the SWPPP to be available on demand to Department and EPA personnel.

7. 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 Sections 301(b)(2)(C) and (D), §304(b)(2), and §307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not limited in the permit.

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

9. 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).
      (4) The level established by the Director in accordance with §122.44(f).

C. SPECIAL CONDITIONS (CONTINUED)

10. Report as 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. Reporting of Non-Detects
    (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
    (b) The permittee shall not report a sample result as "non-detect" without also reporting the detection limit of the test. Reporting as "non-detect" without also including the detection limit will be considered failure to report, which is a violation of this permit.
    (c) The permittee shall report the "non-detect" result using the less than sign and the minimum detection limit (e.g. <10).
    (d) Where the permit contains a Minimum Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
    (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
    (f) 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).

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0001856
DOE RUN – FLETCHER MINE AND MILL

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

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: Major Categorical Industrial
Facility SIC Code(s): 1031
Facility NAICS Code: 212231
Application Date: 05/19/2014
Modification Date: 10/28/2011
Expiration Date: 11/12/2014
Last Inspection: 03/25/2014

FACILITY DESCRIPTION:
Mining and milling of copper, lead, and zinc ores. Within the last permit renewal, all wastewater discharges are piped to the West Fork facility, and the facility has lifted the dam to provide more capacity and therefore moved outfall #002 a few hundred feet south to show the actual discharge location of the emergency spillway area. Each outfall now has a classified tributary prior to the previous first classified stream; the first named stream is Bee Fork.

PERMITTED FEATURES TABLE:

OUTFALL	AVERAGE FLOW	DESIGN FLOW	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.19 MGD	13.1 MGD	retention, settling	tailings sluice water, industrial stormwater
#002	0.44 MGD	0.54 MGD	retention, settling	tailings sluice water, industrial stormwater
#003	0.16 MGD	0.24 MGD	retention, settling	tailings sluice water, industrial stormwater

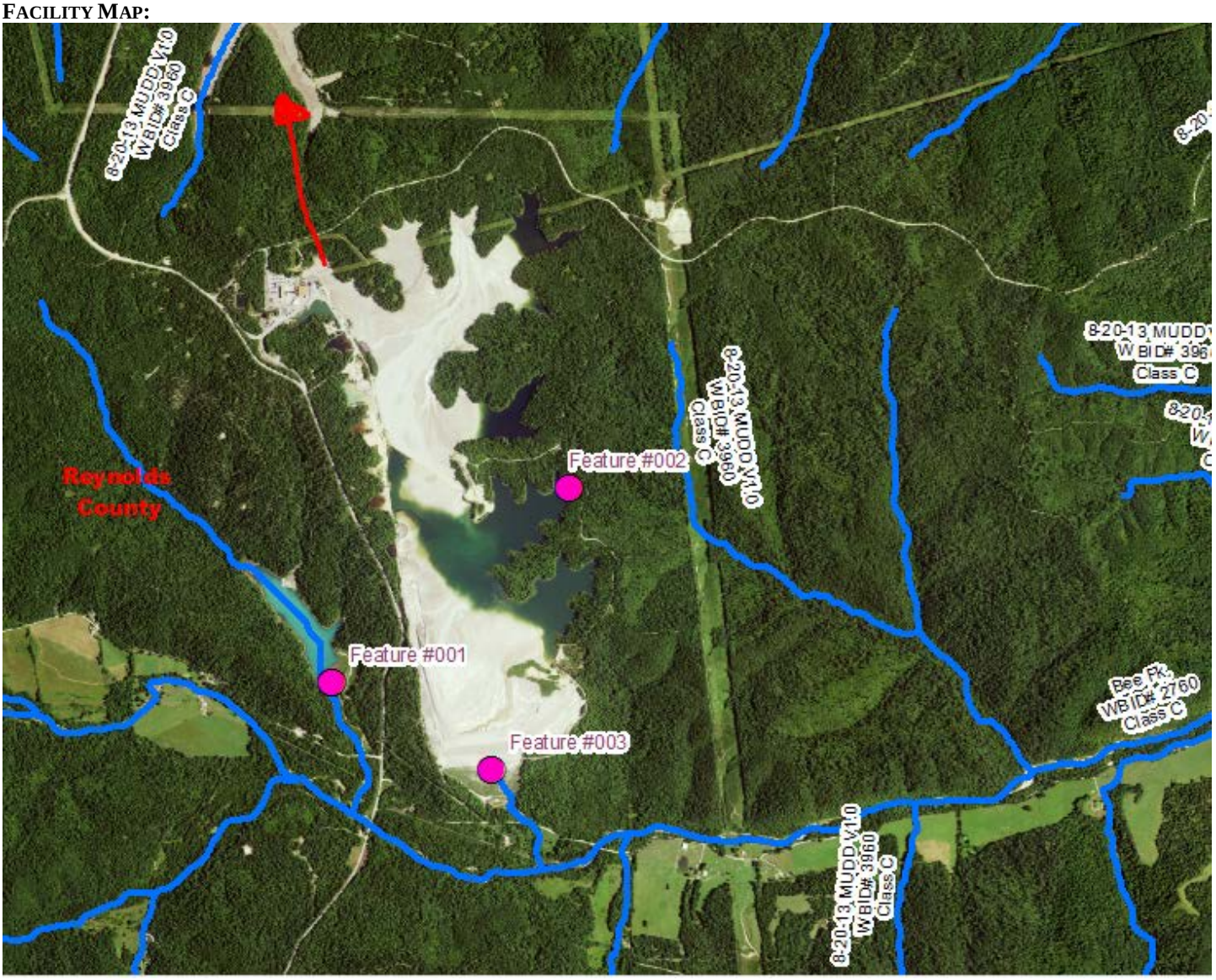
FACILITY PERFORMANCE HISTORY & COMMENTS:
The facility has raised the dam height and transferring all wastewater to West Fork since last renewal. The facility began to send wastewater to West Fork December 2016. Outfalls #002 and #003 rarely discharge; outfall #002 exceeded lead once and zinc twice; outfall #003 discharged four times in the last four years and exceeded cadmium, copper, lead, zinc, pH, and total suspended solids. Outfall #001, the principal outfall, exceeded cadmium, lead, and zinc. Only data since the change was used to make permit decisions for this renewal. The permittee reported an exceedance of lead at outfall #001 seven times since 12/2016, and cadmium once. All of these were at the higher stormwater flows which this permit addresses by allowing for stormwater discharges separate from dry-weather flows using a tiered approach. See Appendix 1.

The facility previously had a metals translator; however, this permit cannot use the translator as there is no longer wastewater discharged. See Part IV; METALS section.

The permittee disclosed the discharges from the facility consist of only industrially exposed stormwater but the flow was not intermittent as defined by 40 CFR 122.45(e) for outfall #001. Therefore, all lower-flow limitations within this permit will contain a daily maximum and monthly average in accordance with 40 CFR 122.45(d) where RP is found. Additionally, limitations derived in this permit are for all three outfalls and considered together when determining reasonable potential. However, due to the varying nature of the discharges, especially for outfalls #002 and #003, the permit writer chose to use a CV of 0.6 for all discharges when determining limitations because the variability of stormwater discharges tend to inflate the CV and lower the monthly average to unattainable values. Because the facility uses a sluicing method to deposit tailings, the permit writer has determined the facility is still discharging wastewater, albeit not from the process of mining and milling ore, therefore most of the ELG (40 CFR 440) is still applicable.

The permittee provided additional data regarding flow type and size to allow for tiered limitations during storm events. See Appendix #1. The permittee has shown two types of discharges flow through outfall #001, toe drain seep, a "dry-weather" discharge, and stormwater, wet weather discharges. The department has determined stormwater discharges need not be held to the rigorous standards of process wastewater discharges as stormwater discharges are highly variable. See Part III, STORMWATER PERMITTING. The permittee is making progress in cleaning out the basin and working towards determining other causes of exceedances. Because there is a basin, the facility has shown there is treatment of the stormwater therefore is permitted with tiered limits.

FACILITY MAP:



The red arrow indicates the transfer of process wastewater to West Fork. Outfalls #001, #002, and #003 are stormwater only although tailings are still placed in the basin associated with outfalls #002 and #003.

Part II. Receiving Stream Information

Receiving Water Body's Water Quality:
The receiving stream has no concurrent water quality data available. However, see 303(d) list section below.

303(d) List:
Section 303(d) of the federal Clean Water Act requires each state identify waters 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 impaired waters not addressed by normal water pollution control programs. http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm

✓ Applicable; Bee Fork is listed on the 2016 Missouri 303(d) list for lead.
✓ This facility is considered to be a source of and has the potential to contribute to the above listed pollutants.

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/

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

Applicable Designations of Waters of the State:
✓ As per Missouri's Effluent Regulations [10 CSR 20-7.015(1)(B)], the waters of the state are divided into the following seven categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's effluent limitation table and further discussed in the derivation & discussion of limits section.

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

Receiving Streams Table:

Outfall	Waterbody Name	Class	WBID	Designated Uses*	Distance to Segment (Miles)	12-digit HUC
#001	8-20-13 MUDD V1.0	C	3960	HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)	0	Bee Fork 11010007-0102
#002	8-20-13 MUDD V1.0	C	3960	HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)	0	
#003	8-20-13 MUDD V1.0	C	3960	HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)	0	

The above streams are not the same receiving streams but all flow south to Bee Fork.

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)(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.

10 CSR 20-7.031(6): **GRW** = Groundwater

ECOLOGICAL DRAINAGE UNIT:
The EDU for this facility is Ozark/Black/Current.

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.

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

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

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

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

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.

✓ Limitations in this operating permit for the reissuance conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
- ✓ Material and substantial alterations or additions to the permitted facility occurred after permit issuance justify the application of a less stringent effluent limitation.
  - Effluent limitations in this permit reflect the current operations of the facility; the facility no longer discharges process wastewater from the mining and milling of ores, only stormwater and sluice water.
    - Mercury was removed from monitoring and limitation requirements implemented by the ELG; the ELG was determined to no longer be applicable to the current discharge at this facility and the DMRs show no detections of this parameter.
    - The facility has shown flows greater than 0.1 MGD are flows associated primarily with stormwater discharges. At the time the flow rate reaches 0.1 MGD, all dry-weather flows (average 0.03-0.08 MGD) are insignificant therefore this permit establishes limitations appropriate for stormwater discharges at high flows. The facility is working toward remediating the stormwater basin so high flows do not stir up sediments.
- ✓ 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.
  - Hardness data supplied by the permittee shows the hardness used for calculations to be greater than previously used in calculations. Previous permit used 217 mg/L; the hardness is currently calculated as: 308 mg/L. As a metals translator was not applied in the previous permit for cadmium and zinc, the calculated effluent limitations have been increased.
- ✓ The Department determined technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).
  - The previous permit special conditions contained a specific set of prohibitions related to general criteria found in 10 CSR 20-7.031(4); however, there was no determination as to whether the discharges have reasonable potential to cause or contribute to excursion of those general water quality criteria in the previous permit. Federal regulations 40 CFR 122.44(d)(1)(iii) requires instances where reasonable potential (RP) to cause or contribute to an exceedance of a water quality standard exists, a numeric limitation must be included in the permit. Rather than conducting the appropriate RP determination, the previous permit simply placed the prohibitions in the permit. These conditions were removed from the

permit. Appropriate reasonable potential determinations were conducted for each general criterion listed in 10 CSR 20-7.031(4)(A) through (I) and effluent limitations were placed in the permit for those general criteria where it was determined the discharge had reasonable potential to cause or contribute to excursions of the general criteria. Specific effluent limitations were not included for those general criteria where it was determined the discharges will not cause or contribute to excursions of general criteria. Removal of the prohibitions does not reduce the protections of the permit or allow for impairment of the receiving stream. The permit maintains sufficient effluent limitations, monitoring requirements and best management practices to protect water quality.

ANTIDEGRADATION REVIEW:
For process water discharge with new, altered, or expanding discharges, 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.

For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the antidegradation analysis 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.

✓ Applicable; the facility must review and maintain stormwater BMPs as appropriate.

BENCHMARKS:
When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer. Benchmarks require the facility to monitor, and if necessary, replace and update stormwater control measures. Benchmark concentrations are not effluent limitations. A benchmark exceedance, therefore, is not a permit violation; however, failure to take corrective action is a violation of the permit. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the permittee in knowing when additional corrective actions may be necessary to comply with the limitations of the permit.

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 determined by the site specific conditions including the receiving water's current quality. While inspections of the stormwater BMPs occur monthly, facilities with no compliance issues are usually expected to sample stormwater quarterly.

Numeric benchmark values are based on water quality standards or other stormwater permits including guidance forming the basis of Environmental Protection Agency's (EPA's) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP). Because precipitation events are sudden and momentary, benchmarks based on state or federal standards or recommendations use the Criteria Maximum Concentration (CMC) value, or acute standard. The CMC is the estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The CMC for aquatic life is intended to be protective of the vast majority of the aquatic communities in the United States.

✓ Not applicable; this facility currently shows RP for the metals in the permit therefore benchmarks are not available.

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.

✓ Applicable; the facility is currently under enforcement action due to unpermitted discharges. Effluent limitations continued in this permit correspond to the applicable operations of the facility.

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 permit writer has noted the facility still places tailings from mining into the tailings pile using a wet method called sluicing. As this activity is not fully described in the Effluent Limitation Guideline at 40 CFR 440 Subpart J, the ELG, the permit writer has evaluated the wording, which states "discharges from mines that produce copper, lead, zinc, gold, silver, or molybdenum bearing ores, or any combination of these ores from open-pit or underground operations other than placer deposits". The discharges are not from the mining and milling process wastewater but do include sluice water from tailings deposits therefore this ELG is still generally applicable to the facility. See Part IV regarding specific parameter discussion.

GENERAL CRITERIA CONSIDERATIONS:
In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants which have been determined to cause, have the reasonable potential to cause, or to contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect that narrative criterion. The previous permit included the narrative criteria as specific prohibitions placed upon the discharge. These prohibitions were included in the permit absent any discussion of the discharge's reasonable potential to cause or contribute to an excursion of the criterion. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether the discharge has reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches that of the rule itself, under 10 CSR 20-7.031(4)). In instances where reasonable potential exists, the permit includes numeric limitations to address the reasonable potential. In instances where reasonable potential does not exist the permit includes monitoring of the discharges potential to impact the receiving stream's narrative criteria. Finally, all of the previous permit narrative criteria prohibitions have been removed from the permit given they are addressed by numeric limits where reasonable potential exists. It should also be noted that Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state that it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri that is 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.

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for putrescent bottom deposits preventing full maintenance of beneficial uses because nothing disclosed by the permittee indicates putrescent wastewater would be discharged from the facility.
- For all outfalls, there is no RP for unsightly or harmful bottom deposits preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates unsightly or harmful bottom deposits would be discharged from the facility.

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for oil in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal or during prior sampling for DMR requirements for these outfalls indicates oil will be present in sufficient amounts to impair beneficial uses.
- For all outfalls, there is no RP for scum and floating debris in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates scum and floating debris will be present in sufficient amounts to impair beneficial uses

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for unsightly color or turbidity in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates unsightly color or turbidity will be present in sufficient amounts to impair beneficial uses.
- For all outfalls, there is no RP for offensive odor in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates offensive odor will be present in sufficient amounts to impair beneficial uses.

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.
- The permit writer considered specific toxic pollutants when writing this permit. Numeric effluent limitations are included for those pollutants that could be discharged in toxic amounts. These effluent limitations are protective of human health, animals, and aquatic life.

(E) There shall be no significant human health hazard from incidental contact with the water.
- This criterion is very similar to (D) above. See Part IV, Effluent Limits Derivation below.

(F) There shall be no acute toxicity to livestock or wildlife watering.
- This criterion is very similar to (D) above. See Part IV, Effluent Limits Derivation below.

(G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.
- For all outfalls, there is no RP for physical changes that would impair the natural biological community because nothing disclosed by the permittee indicates physical changes that would impair the natural biological community.
- For all outfalls, there is no RP for chemical changes that would impair the natural biological community because nothing disclosed by the permittee indicates chemical changes are occurring impairing the natural biological community.
- For all outfalls, there is no RP for hydrologic changes that would impair the natural biological community because nothing disclosed by the permittee indicates hydrologic changes would impair the natural biological community.

(H) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.
- There are no solid waste disposal activities or any operation that has reasonable potential to cause or contribute to the materials listed above being discharged through any outfall.

GROUNDWATER MONITORING:
Groundwater is a water of the state according to 10 CSR 20-7.015(1)11, 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 is not required to monitor groundwater for the water protection program.

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/pub2337.htm
✓ Not applicable; this permittee cannot withdraw water from the state in excess of 70 gpm/0.1 MGD.

NO-DISCHARGE LAND APPLICATION:
Land application of wastewater or sludge shall comply with the all applicable no-discharge requirements listed in 10 CSR 20-6.015 and all facility operations and maintenance requirements listed in 10 CSR 20-8.020(15). 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 that 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 no-discharge land application system to treat wastewater or sludge.

REASONABLE POTENTIAL (RP):
Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are (or may be) discharged at a level 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 that pollutant per 40 CFR Part 122.44(d)(1)(iii) and the most stringent limits per 10 CSR 20-7.031(9)(A).
✓ Applicable; an RPA was conducted on appropriate parameters and was conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request. See Wasteload Allocations (WLA) for Limits in this section.
✓ Evaluated at all flows.

Parameter	units	Daily Max	Monthly Average	CMC	RWC Acute	CCC	RWC Chronic	n	Max/Min	CV	MF	RP
Cadmium, TR	µg/L	3.34	1.07	15.8	15.72	1.9	15.72	53	4.6/0	2.1	3.42	yes
Copper, TR	µg/L	29.0	12.0	29.0	11.63	18.08	11.63	26	5.1/0.93	0.903	1.81	no
Lead, TR	µg/L	22.79	10.57	341.7	850.35	13.3	850.35	53	469/3	0.7	1.81	yes
Zinc, TR	µg/L	311.42	140.09	311.4	648.66	308.9	648.66	53	346/7.6	0.7	1.87	yes

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).

✓ 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 V provides specific decisions related to this permit.

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 that was 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 to Permit Writers in developing SOCs, and attain a greater level of consistency, on October 25, 2012 the department issued a policy on development of SOCs. This policy provides guidance to permit writers on the standard time frames for schedules for common activities, and guidance on factors that may modify the length of the schedule such as an affordability analysis.

✓ Not applicable; tiered limitations requested by the permittee will allow the facility to remain in compliance with all water quality limitations proposed in this renewal.

✓ To determine applicability of schedules of compliance for parameters limited in this permit, the permit writer determined outfalls #002 and #003 were meeting any limitations imposed in the permit immediately as these outfalls are not intended to discharge.

SPILL REPORTING:

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

SLUDGE – DOMESTIC BIOSOLIDS:

Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for beneficial use (i.e. fertilizer). 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. Additional information: http://extension.missouri.edu/main/DisplayCategory.aspx?C=74 (WQ422 through WQ449).

✓ Permittee is not authorized to land apply biosolids. The permittee must submit a sludge management plan for approval detailing removal and disposal plans when sludge is to be removed from lagoons.

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.
✓ Not applicable; sludge is not generated at this facility.

STORMWATER PERMITTING:
A standard mass-balance equation cannot be calculated for stormwater from this facility because the stormwater flow and flow in the receiving stream cannot be determined for conditions on any given day. The amount of stormwater discharged from the facility will vary based on previous rainfall, soil saturation, humidity, detention time, BMPs, surface permeability, etc. Flow in the receiving stream will vary based on climatic conditions, size of watershed, amount of surfaces with reduced permeability (houses, parking lots, and the like) in the watershed, hydrogeology, topography, etc. Decreased permeability increases the flash of the stream.

It is likely sufficient rainfall to cause a discharge for four continuous days from a facility will also cause some significant amount of flow in the receiving stream. Chronic WQSs are based on a four-day exposure (except ammonia, which is based on a thirty day exposure). In the event a discharge does occur from this facility for four continuous days, some amount of flow will occur in the receiving stream. This flow will dilute stormwater discharges from a facility. For these reasons, most industrial stormwater facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute WQSs are based on a one hour of exposure, and must be protected at all times in unclassified streams, and within mixing zones of class P streams [10 CSR 20-7.031(4) and (5)(4)4.B.]. Therefore, industrial stormwater facilities with toxic contaminants do have the potential to cause a violation of acute WQSs if those toxic contaminants occur in sufficient amounts.

It is due to the items stated above staff are unable to perform statistical Reasonable Potential Analysis (RPA). However, staff will use their best professional judgment in determining if a facility has a potential to violate Missouri's Water Quality Standards.

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*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering 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 storm water discharges.

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 that are reasonable and cost effective. The AA evaluation should include practices that are 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 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; the application is found at: http://dnr.mo.gov/forms/index.html.

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

TECHNOLOGY-BASED EFFLUENT LIMITATIONS (TBEL):

One of the major strategies of the Clean Water Act (CWA) in making "reasonable further progress toward the national goal of eliminating the discharge of all pollutants" is to require effluent limitations based on the capabilities of the technologies available to control those discharges. Technology-based effluent limitations (TBELs) aim to prevent pollution by requiring a minimum level of effluent quality attainable using demonstrated technologies for reducing discharges of pollutants or pollution into the waters of the United States. TBELs are developed independently of the potential impact of a discharge on the receiving water, which is addressed through water quality standards and water quality-based effluent limitations (WQBELs).

✓ Not applicable; the permittee is subject to an ELG therefore those technology limitations will be used instead of an individual TBEL POC analysis.

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, the facility operates the domestic wastewater system as a subsurface injection. The facility must register the system if greater than 3000 gallons per day are discharged into the system if they have not previously completed registration.

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 waters, then the other must be used.

✓ Applicable; wasteload allocations were calculated where relevant using water quality criteria or water quality model results and by applying the dilution equation below:

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

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

- 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).
- Water quality based MDL and AML effluent limitations were calculated using methods and procedures outlined in USEPA's *Technical Support Document For Water Quality-based Toxics Control* or TSD EPA/505/2-90-001; 3/1991.
- Number of Samples "n": In accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance which should be, at a minimum, targeted to comply with the values dictated by the WLA. Therefore, it is recommended the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For total ammonia as nitrogen, "n = 30" is used.

WLA MODELING:
Permittees may submit site specific studies to better determine the site specific wasteload allocations applied in permits.

✓ No longer applicable; the previous permit used a dissolved metals translator study but is no longer applied. See Part IV, outfall #001, METALS.

Part IV. Effluent Limits Determination

Effluent limitations derived and established in the below effluent limitations table are based on current operations of the facility. Effluent means both process water and stormwater. 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 that supersede the terms and conditions, including effluent limitations, of this operating permit. Daily maximums and monthly averages are required under 40 CFR 122.45(d)(1) for continuous discharges not from a POTW.

Outfalls #001, #002, and #003

Effluent Limitations Table for ≤0.1 MGD flows:

PARAMETERS	Unit	Daily Max	Monthly Avg	previous permit limits	Minimum Sampling Frequency	Minimum Reporting Frequency	Sample Type
Physical							
Flow	MGD	*	*	same	once/month	once/month	24 Hr. Tot
Conventional							
pH Ω	SU	6.5 to 9.0	6.5 to 9.0	same	once/month	once/month	grab
TSS	mg/L	30	20	same	once/month	once/month	grab
Metals							
Cadmium, TR	µg/L	1.0	0.5	1.0, 0.5	once/month	once/month	grab
Copper, TR	µg/L	29.0	12.0	82.1, 40.9	once/month	once/month	grab
Lead, TR	µg/L	23.0	11.5	23.0, 11.5	once/month	once/month	grab
Nickel, TR	µg/L	*	*	new	once/month	once/month	grab
Zinc, TR	µg/L	275.5	137.3	275.5, 137.3	once/month	once/month	grab
Other							
WET Test – Chronic Ψ	TUc	1.6	-	same	once/year	once/year	grab

Effluent Limitations Table for >0.1 MGD Flows:

PARAMETERS	Unit	Daily Max	Monthly Avg	previous permit limits	Minimum Sampling Frequency	Minimum Reporting Frequency	Sample Type
Physical							
Flow	MGD	*	*	same	once/month	once/month	24 Hr. Tot
Conventional							
pH Ω	SU	6.5 to 9.0	*	same	once/month	once/month	grab
TSS	mg/L	30	*	30, 20	once/month	once/month	grab
Metals							
Cadmium, TR	µg/L	13.8	*	new	once/month	once/month	grab
Copper, TR	µg/L	29.0	*	new	once/month	once/month	grab
Lead, TR	µg/L	361	*	new	once/month	once/month	grab
Nickel, TR	µg/L	*	*	new	once/month	once/month	grab
Zinc, TR	µg/L	226	*	new	once/month	once/month	grab

* Monitoring requirement only
Ω Report the minimum and maximum pH values; pH is not to be averaged
new Parameter not established in previous state operating permit
TR Total Recoverable
Ψ Outfall #001 only

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). The permit indicates a total for the day must be reported to the Department. The facility is not required to install a flow totalizer but provide an instantaneous measurement and multiply appropriately to obtain the 24 hour discharge.

Hardness
The previous permit required hardness monitoring. This is no longer required but the facility may still submit in-stream data for site specific representative hardness upon permit renewal.

Precipitation
Previous permit required monitoring of this parameter; the permit writer has determined this is no longer required for this permit. The facility may still need to track stormwater in the SWPPP.

CONVENTIONAL:

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. Continued from previous permit.

Total Suspended Solids (TSS)
Technology based limits from 40 CFR 440 J; 30 mg/L daily maximum; 20 mg/L monthly average. Continued from previous permit. While the facility does not discharge process wastewater, significant materials continue to exist in the basin and the mine and mill continues to run.

METALS:
Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the *Technical Support Document For Water Quality-based Toxic Controls* (EPA/505/2-90-001) and *The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007). General warm-water habitat criteria apply (WWH) designated as AQL in 10 CSR 20-7.031 Table A. Additional use criterion (HHP, DWS, GRW, IRR, or LWW) may also be used as applicable to determine the most protective effluent limit for the stream class and uses.

The previous permit used 217 mg/L as the 25th percentile of hardness data collected from 1/2006 to 12/2010. When there are no site specific translator studies, partitioning between the dissolved and absorbed phases is assumed minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). Site-specific data within the Dissolved Metals Translator (DMT) for total recoverable metals, dissolved metals, hardness, and total suspended solids were provided to the Department in 2011, however, the permit writer did not integrate those findings into derivation of the water quality limits at this renewal as the DMT study was performed on the effluent discharges prior to the change in discharges (sending process wastewater to West Fork) in March 2013. The permit writer has determined the past partitioning coefficients are no longer applicable to the facility. Calculations for the revised WQS use standard coefficients. Conversion factors for Cd and Pb are hardness dependent.

Cadmium, Total Recoverable
Flow ≤0.1 MGD
The ELG limitations are 100 µg/L daily maximum and 50 µg/L monthly average. The facility reported between 0.028 to 4.6 µg/L at outfall #001. Previous permit limits were 1.0 µg/L daily maximum and 0.5 µg/L monthly average, continued from previous permit.

Flow > 0.1 MGD

Acute AQL WQS:	$e^{(1.0166 * \ln 217 - 3.062490)} * (1.136672 - \ln 217 * 0.041838) = 10.198$	[at Hardness 217]
Acute TR WQS:	10.098 ÷ 0.730 = 13.833	[Total Recoverable Conversion]
LTA_a:	13.833 (0.321) = 4.440	[CV = 0.6, 99th Percentile]
MDL:	4.440 (3.11) =13.809 = **13.8 µg/L**	[CV = 0.6, 95th Percentile, n = 4]

Copper, Total Recoverable

Flow ≤0.1 MGD

Previous permit limits were 82.1 µg/L daily maximum and 40.9 µg/L monthly average. The ELG limitations are 300 µg/L daily maximum and 150 µg/L monthly average. The facility reported between 3.9 to 6.6 µg/L at outfall #001. While this parameter shows no RP, the permit writer has determined future cleaning of the basin warrants continued limitations.

Acute AQL: e^(1.0166 * ln217 – 3.062490) * (1.136672 – ln217 *0.041838) = 27.877 µg/L [at hardness 217]
Chronic AQL: e^(0.7977 * ln217 – 3.909) * (1.101672 – ln217*0.041938) = 17.362 µg/L [at hardness 217]
TR Conversion = AQL/Translator = 27.877 / 0.96 = 29.039 [at hardness 217]
TR Conversion = AQL/Translator = 17.362 / 0.96 = 18.086 [at hardness 217]
Acute WLA: Ce = ((0.155 cfsDF + 0 cfsZID) 29.039 – (0 cfsZID * 0 background)) / 0.155 cfsDF = 29.039
Chronic WLA: Ce = ((0.155 cfsDF + 0 cfsMZ) 18.086 – (0 cfsMZ * 0 background)) / 0.155 cfsDF = 18.086
LTAa = WLAa * LTAa multiplier = 29.039 * 0.224 = 6.494 [CV: 0.903, 99th percentile]
LTAc = WLAc * LTAc multiplier = 18.086 * 0.403 = 7.288 [CV: 0.903, 99th percentile]
use most protective LTA = 6.494
Daily Maximum: MDL = LTA * MDL multiplier = 6.494 * 4.472 = 29.0 µg/L [CV: 0.903, 99th percentile]
Monthly Average: AML = LTA * AML multiplier = 6.494 * 1.851 = 12.0 µg/L [CV: 0.903, 95th percentile, n=4]

Flow > 0.1 MGD

Acute AQL WQS: $e^{(0.9422 * \ln 217 - 1.7003)} * 0.960 = 27.877$ [at Hardness 217]
Acute TR WQS: 27.877 ÷ 0.96 = 29.0385 [Total Recoverable Conversion]
LTA_a: 29.0385 (0.321) = 9.321 [CV = 0.6, 99th Percentile]
MDL: 9.321 (3.11) = 28.989 = **29.0 µg/L** [CV = 0.6, 99th Percentile]

Lead, Total Recoverable

Flow ≤0.1 MGD

The facility reported between 3 to 469 µg/L at outfall #001. Previous permit limits were 23.0 µg/L daily maximum and 11.5 µg/L monthly average; continued.

Flow > 0.1 MGD

Acute AQL WQS: $e^{(1.273 * \ln 217 - 1.460448)} * (1.46203 – \ln 217 * 0.145712) = 148.3719$ [at Hardness 217]
Acute TR WQS: 148.3719 ÷ 0.41 = 361.882 [Total Recoverable Conversion]
LTA_a: 361.882 (0.321) = 116.164 [CV = 0.6, 99th Percentile]
MDL: 116.164 (3.11) = **361 µg/L** [CV = 0.6, 99th Percentile]

Mercury, Total Recoverable

Previous permit limitations were based on the ELG at 40 CFR 440 J; the permit writer has no reason to believe mercury is present in the discharge at this facility; recent and historical testing of the effluent show no discharge of this parameter. Monitoring and limits not continued; see Part III ANTIBACKSLIDING. After review of the development document for this category of discharger, the facility does not discharge process wastewater associated with the mining and milling of ore therefore this ELG limitation is not required.

Nickel, Total Recoverable

Nickel is a hardness dependent metal and the facility reported a maximum value of 54 µg/L for this parameter in the application for renewal. Monitoring is required to determine facility's reasonable potential to exceed Missouri's WQS.

Zinc, Total Recoverable

Flow ≤0.1 MGD

Previous permit limits were 275.5 µg/L daily maximum and 137.3 µg/L monthly average; continued for flows less than or equal to 0.1 MGD. The facility reported between 7.6 and 346 µg/L. ELG limits are 1000 µg/L daily maximum, 500 µg/L monthly average.

Flow > 0.1 MGD

Acute AQL WQS: $e^{(0.8473 * \ln 217 + 0.884)} * 0.98 = 226.373$ [at Hardness 217]
Acute TR WQS: 226.373 ÷ 0.978 = 231.465 [Total Recoverable Conversion]
LTA_a: 231.465 (0.321) = 72.684 [CV = 0.6, 99th Percentile]
MDL: 72.684 (3.11) = 226.047 = **226 µg/L** [CV = 0.6, 99th Percentile]

OTHER:

Whole Effluent Toxicity (WET) Test, Chronic

Annual monitoring and limitations continued from the previous permit; outfall #001 only. The monthly restriction was removed; the facility may sample at any time during the year. This facility's discharge frequently exceeds the numeric limitation for the cladoceran portion of the test although the fish are usually spared toxicity. The facility will be required to perform a toxicity reduction evaluation (TRE) for the discharges if toxicity persists.

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

Acute WLA: $C_e = ((DF_{cfs} + ZID_{7Q10})\ 0.3 - (ZID_{7Q10} * \text{Background}))/\ DF_{cfs}$

$C_e = 0.3\ \text{TUa} * 10 = 3.0\ \text{TUa,c}$ [ACR: acute-to-chronic ratio = 10]

(The acute WLA is converted to a long-term average concentration (LTAa,c) using: WLAa,c = WLAa × 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.)

Chronic WLA: $C_e = ((DF_{cfs} + MZ_{7Q10})\ 1.0 - (MZ_{7Q10} * \text{Background}))/\ DF_{cfs}$

$C_e = 1.0\ \text{TUc}$

$LTA_{a,c}$: 3.0 (0.321) = 0.963 TUa,c [CV = 0.6, 99th Percentile]

LTA_c: 1.0 (0.527) = **0.527 TUa,c** [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 TUc** [CV = 0.6, 99th Percentile]

The standard Allowable Effluent Concentration (AEC) for facilities discharging to Class C streams is 100%.
The standard dilution series for facilities discharging to Class C streams is 100%, 50%, 25%, 12.5%, & 6.25%.

Part V. Sampling and Reporting Requirements:

Refer to each outfall's derivation and discussion of limits section to review individual sampling and reporting frequencies and sampling type. Additionally, see Standard Conditions Part I attached at the end of this permit and fully incorporated within.

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. This 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. 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 non-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.

✓ The permittee/facility is currently using the eDMR data reporting system.

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. 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, dissolved oxygen, total phosphorus, and volatile organic samples.

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 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 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 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 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. Table A at 10 CFR 20-7.031 shows water quality standards.

Part VI. Administrative Requirements

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

Permit Synchronization:
The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. 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 three years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

- ✓ If the Department issues the permit at this time, the effective period of the permit would be less than one year in length. To ensure efficient use of Department staff time, reduce the Department's permitting back log, and to provide better service to the permittee by avoiding another renewal application to be submitted in such a short time period, this operating permit will be issued for the maximum timeframe of five years and synced with other permits in the watershed at a later date. The synchronization schedule is fourth quarter 2019/2023.

Public Notice:
The Department shall give public notice that 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 and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

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

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

- ✓ The Public Notice period for this operating permit was from 3/1/2019 to 4/1/2019; two comments were received.

Comment #1
The sample type outlined in Table A-1 for flow is listed as 24 hour total. As Doe Run does not utilize a flow totalizer for measuring flow at these outfalls, but rather a field measurement at the time of sampling, we request that the language be clarified to "24 Hr. Estimate."

Response #1
The Department realizes many facilities with the sample type as "24 hr. total" do not have flow totalizers, the Department still expects the facility to measure the effluent and calculate the total for the day using appropriate methods. The sample type was not changed on the permit but was noted in the fact sheet. Estimated flows, such as those typically applied to stormwater insinuate the facility is not required to measure at all but provide a calculation which takes into account the stormwater intensity, and area where a flow is then estimated based on user inputs.

Comment #2
We noted that the total recoverable cadmium limits set forth in Table A-1 is based upon the Missouri Clean Water Commission's former chronic cadmium water quality criteria. Approximately one year ago, the Missouri Clean Water Commission revised the chronic cadmium water quality criteria to mirror EPA's recent revision to its 30-4(a) chronic cadmium criteria. Unfortunately, the EPA has yet to approve the cadmium criteria despite missing their deadline to approve or disapprove the criteria.

Doe Run believes it would be prudent to recalculate the cadmium criteria based upon Missouri's recently revised chronic cadmium criteria. EPA would have no grounds to object to the permit because the permit limits would be based upon the EPA's chronic criteria set forth in EPA's 304(a) criteria document published in the Federal Register on April 4, 2016 (81 Fed. Reg. 19,176).

By revising the criteria to Match Missouri's current criteria, the department would not have to revise the cadmium limits in this permit after EPA approves Missouri's cadmium criteria. It is more efficient and saves time and money on everyone's part.

Response #2
The Department cannot implement effluent limitations based solely on EPA's 304(a) criteria, because the 304(a) criteria are recommendations, which are not promulgated effluent requirements. As noted in the comment, EPA has yet to approve the new in-stream standards for cadmium, which were published on March 31, 2018 by the Missouri Secretary of State. EPA approval is required for all newly revised standards in accordance with 40 CFR 131.21(e). Doe Run has requested the permit be issued at this time as the current permit is ineffectual at addressing current discharge scenarios. If EPA approves the Department's proposed revised cadmium criteria, the permittee may request and pay for a permit modification.

PERMIT WRITER NOTES:
The permit writer added Limit Set designators to the tables after the PN comment period to assist the permittee in entering data into the eDMR system. This is a new procedure implemented by the Department after the PN period began; this change does not require an additional PN comment period. Limit set LF was used for lower flows, flows less than or equal to 0.1 MGD; HF was used for high flows (above 0.1 MGD); limit set A is the annual WET testing requirement.

DATE OF FACT SHEET: APRIL 4, 2019

COMPLETED BY:
PAM HACKLER, ENVIRONMENTAL SCIENTIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
(573) 526-3386
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APPENDIX #1 – TIERED LIMITATIONS REQUEST

Memorandum

From:	Hans Holmberg	**Date:**	September 14, 2018
	Kathy Hall	**Project:**	DRCSEMO1
To:	Samantha Anderson	**CC:**	Robert Brundage

SUBJECT: Proposed water quality-based effluent limits for Doe Run Fletcher Mine/Mill Outfall 001

The Doe Run Fletcher Mine/Mill NPDES permit is in the process of being renewed. LimnoTech has evaluated water quality-based effluent limits and prepared this memorandum to support discussions with the Missouri Department of Natural Resources (MDNR) regarding appropriate permit limits.

Background

The MDNR has prepared a preliminary draft NPDES permit for the Fletcher Mine/Mill, with water quality-based effluent limits (WQBELs) for cadmium, copper, lead, and zinc at Outfall 001 (Table 1). There have been substantial changes at the Fletcher Mine/Mill since the existing permit was issued in 2011. All process waters have been re-routed to the West Fork Mine for treatment prior to discharge. Outfall 001, the discharge from the historic mine water basin, now receives only stormwater from surrounding areas. Stormwater entering the mine water basin does not contact any industrial activity, but is exposed to existing sediments in the basin.

Table 1. MDNR preliminary WQBELs compared to existing permit limits

	MDNR preliminary limits (µg/L)		Existing permit final limits (µg/L)	
	Daily maximum	Monthly average	Daily maximum	Monthly average
Cadmium	3.2	1.6	1.0	0.5
Copper	40.1	20.0	82.1	40.9
Lead	21.9	10.9	23.0	11.5
Zinc	311.4	155.2	275.5	137.3

The transfer of process waters to West Fork was completed in December 2016. Since the transfer, monitored flows from Outfall 001 have averaged 0.19 MGD (by comparison, MDNR's draft Fact Sheet reported an average flow of 6.31 MGD, based on data prior to the process water transfer). A review of Outfall 001 monitoring data since the transfer indicates that the facility is able to comply with the proposed copper and zinc limits (Figures 1 and 2), while there have been some exceedances of the cadmium and lead limits (Figures 3 and 4).

Doe Run's evaluation of the data suggests that exceedances of the WQBELs since December 2016 were caused by sediment management activities at the facility. Lead concentrations were elevated immediately after the transfer of process waters to West Fork (Figure 4); this was likely due to residual impacts from the transfer. The same general pattern can be seen in the cadmium plot (Figure 3). After the initial transfer period impacted by residuals, there was a steady downward trend in lead concentrations for nearly 1 year (Figure 4). In March of 2018, there was a significant precipitation event that resulted in increased concentrations, believed to be caused by resuspension of sediments. This led Doe Run to begin sediment excavation activities in the upper end of the mine water basin. During May 2018 excavation activities, concentrations were elevated, but have been declining since activities ceased. Doe Run expects the declining trend in concentrations to continue. Doe Run will continue to monitor and implement additional corrective actions if needed.

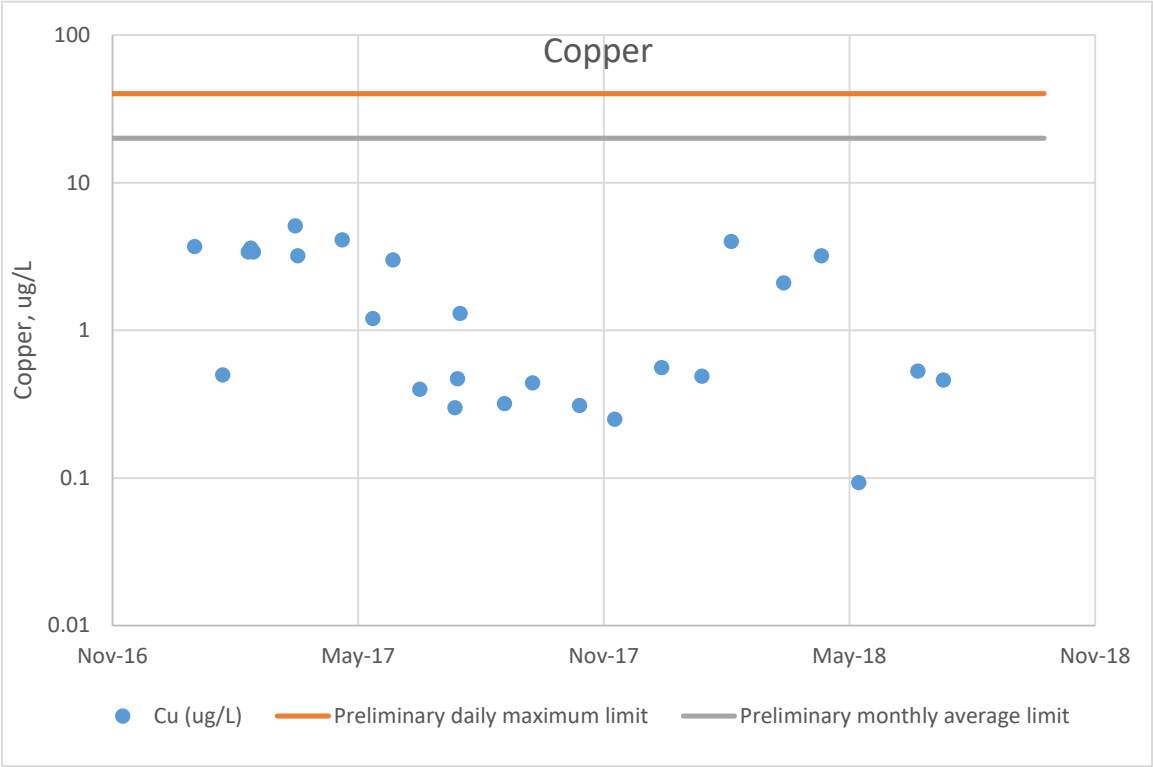


Figure 1. Fletcher Mine/Mill effluent data for copper

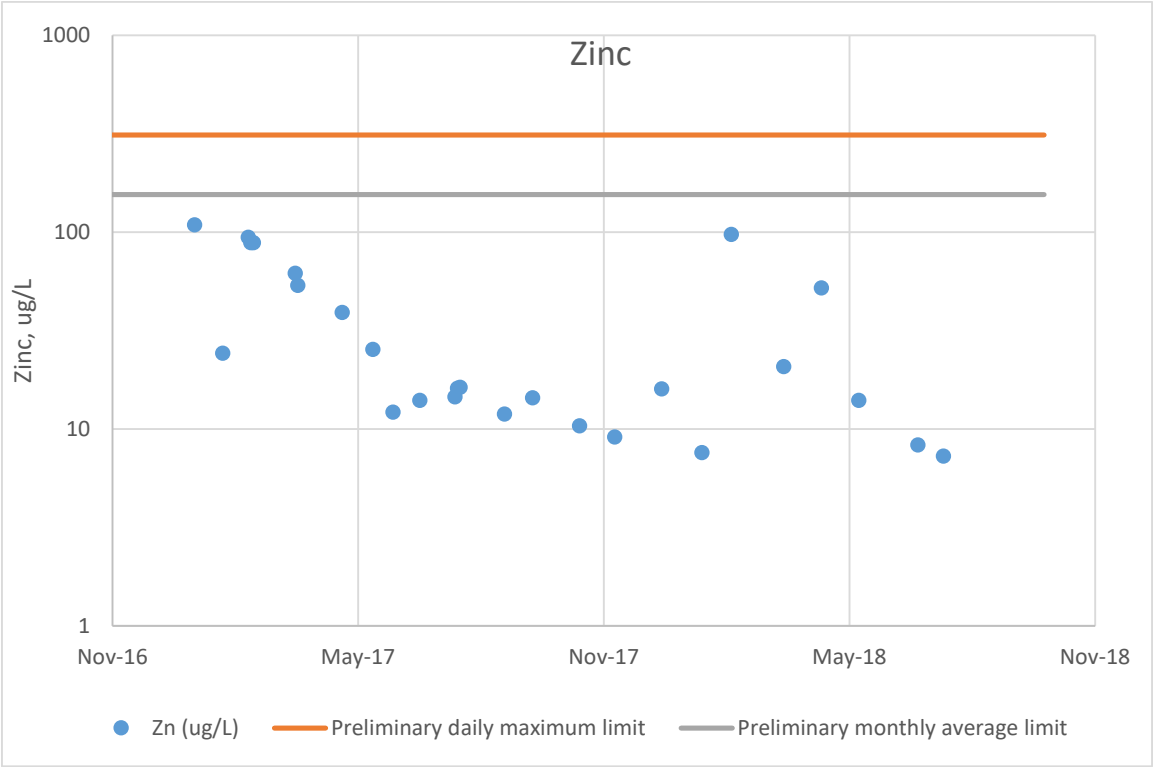


Figure 2. Fletcher Mine/Mill effluent data for zinc

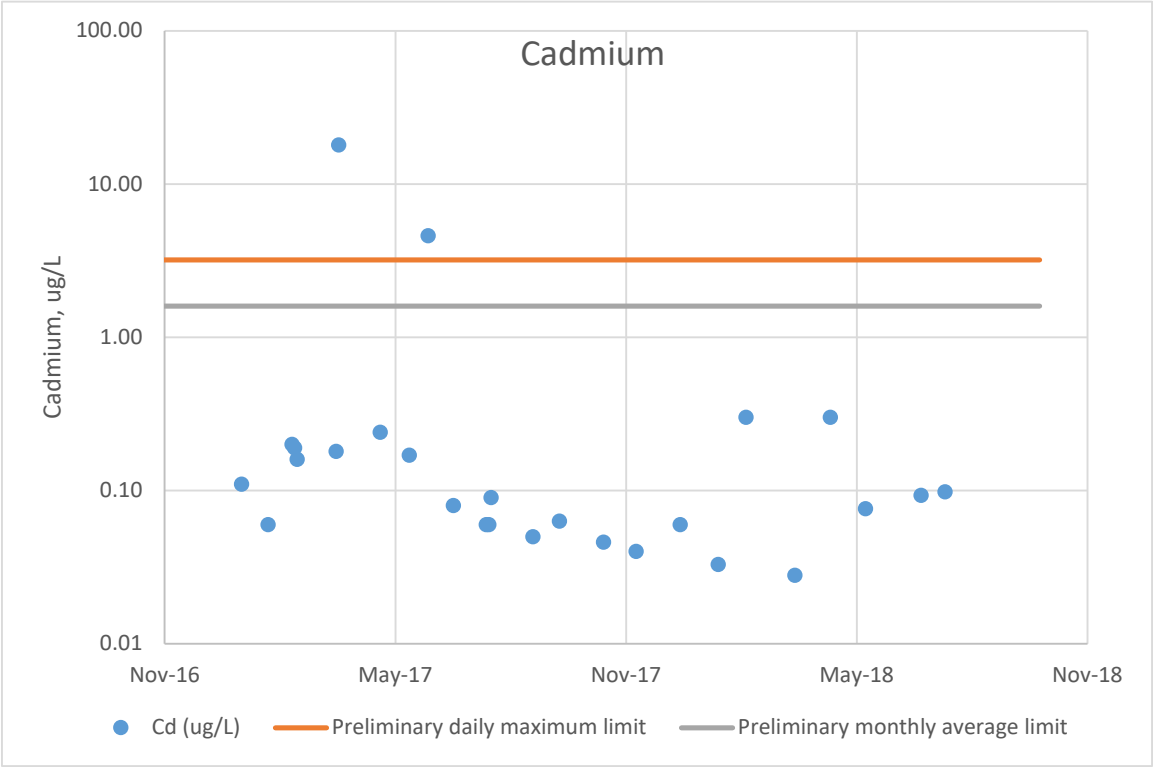


Figure 3. Fletcher Mine/Mill effluent data for cadmium

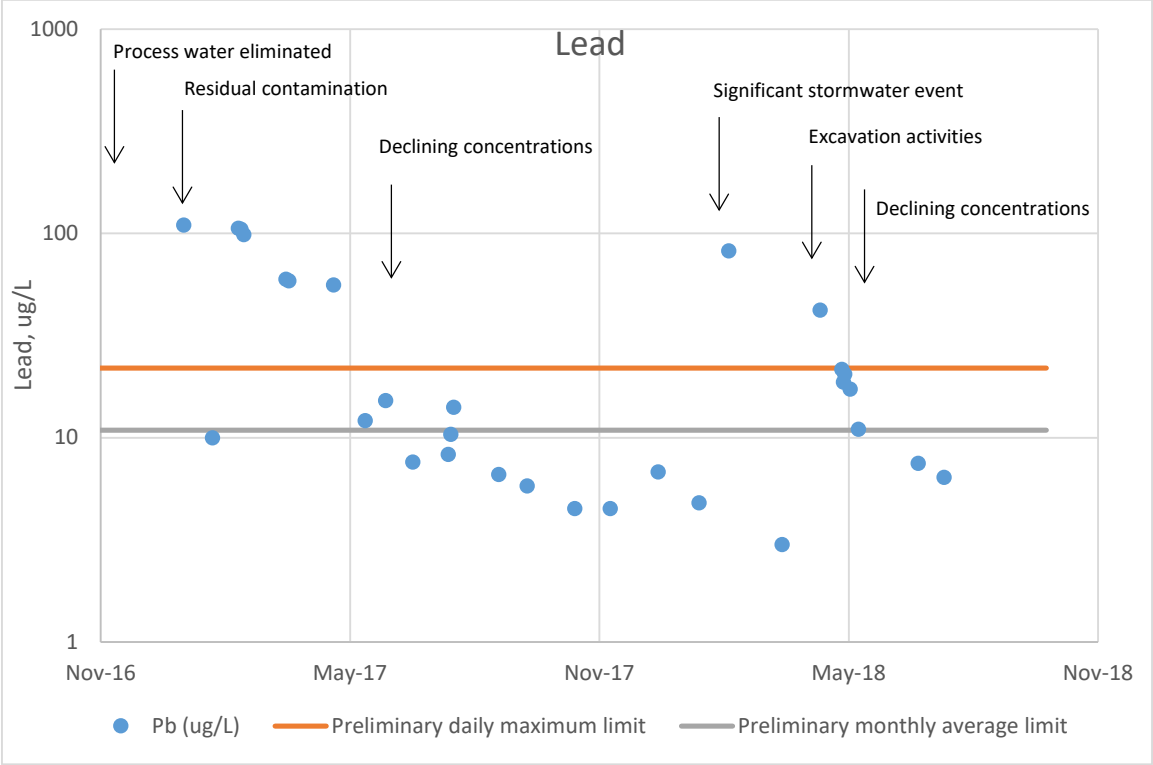


Figure 4. Fletcher Mine/Mill effluent data for lead

Although the data suggest overall declining concentrations, and the corrective actions that have been implemented are expected to address the occasional spikes in concentration as a result of wet weather events, it is unclear at the present time whether Doe Run will be able to comply with MDNR's proposed WQBELs. Given that there is no process water

discharge from Outfall 001, and that occasional elevated concentrations appear to be caused by significant storm events, an alternative permitting approach is appropriate, as described in the next section of this memorandum.

Proposed Permitting Approach

The available monitoring data suggest that the discharges through Outfall 001 can be categorized as either storm-event driven discharges or low-flow baseline discharges. Doe Run believes that the low-flow baseline discharges are caused by seeps through the berm. Monitoring data suggest that these discharges have typical flow rates of 0.03 – 0.08 MGD. Because such discharges occur regularly, MDNR has initially suggested that chronic water quality criteria apply to the discharge.

However, high-flow discharges only occur episodically, as the result of storm events. Application of chronic water quality criteria to short-term, episodic stormwater discharges is not appropriate. Therefore, we propose a two-tiered approach to permitting the discharge from Outfall 001:

- For low-flow discharges, with flows less than or equal to 0.1 MGD, MDNR's proposed WQBELs, which consider both acute and chronic criteria, would apply. The value of 0.1 MGD was selected to conservatively represent low-flow discharge rates. Doe Run's monitoring data indicate a median flow rate of 0.08 MGD, and the majority (68%) of the monitored flows were 0.1 MGD or lower (Figure 5).

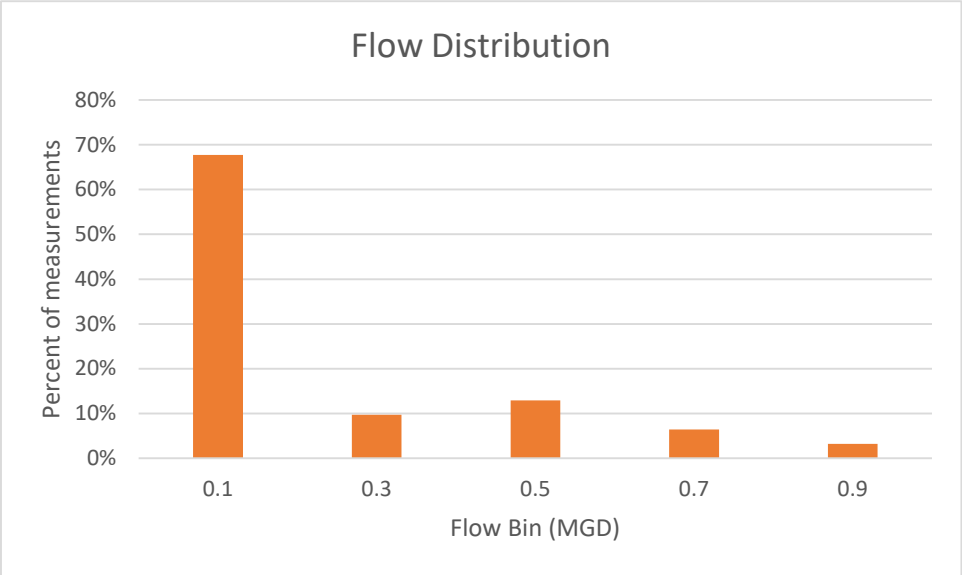


Figure 5. Frequency distribution of Outfall 001 flow rates

- For higher flow, stormwater discharges having flows greater than 0.1 MGD, the WQBELs would be based on acute criteria.

Table 2 shows these proposed flow-tiered limits. These were calculated using the same assumptions and inputs (hardness, dissolved metal translators, etc.) as provided in MDNR's draft Fact Sheet for the Fletcher Mine/Mill, except that the proposed high-flow limits do not consider chronic criteria. For high flows, only daily maximum limits are proposed, as monthly average limits are not appropriate for short-term, episodic stormwater discharges. Note that the copper and zinc limits are the same for both flow tiers; this is because the allowable acute and chronic long-term average concentrations are nearly the same for copper, and because acute criteria govern both low and high flow WQBELs for zinc.

Table 2. Proposed WQBELs for low-flow conditions and high-flow conditions

	Proposed low-flow (≤0.1 MGD) limits (µg/L)		Proposed high-flow (>0.1 MGD) limits (µg/L)
	Daily maximum	Monthly average	Daily maximum
Cadmium	3.2	1.6	15.8
Copper	40	20	40
Lead	21.9	10.9	341
Zinc	311	155	311

As shown in Figures 1 and 2, Doe Run is able to comply with the proposed copper and zinc limits. For cadmium, there have been two samples that have exceeded the proposed low-flow limits, out of a total of 26 samples. It is believed that the corrective actions to address sediments in the basin are likely to alleviate the elevated concentrations. For lead, most of the elevated concentrations have occurred at high-flows. Figure 6 shows that all but one of the lead samples collected under low-flow conditions (≤0.1 MGD) would have complied with the proposed low-flow limit, and all of the samples would have been in compliance with the proposed high-flow limit.

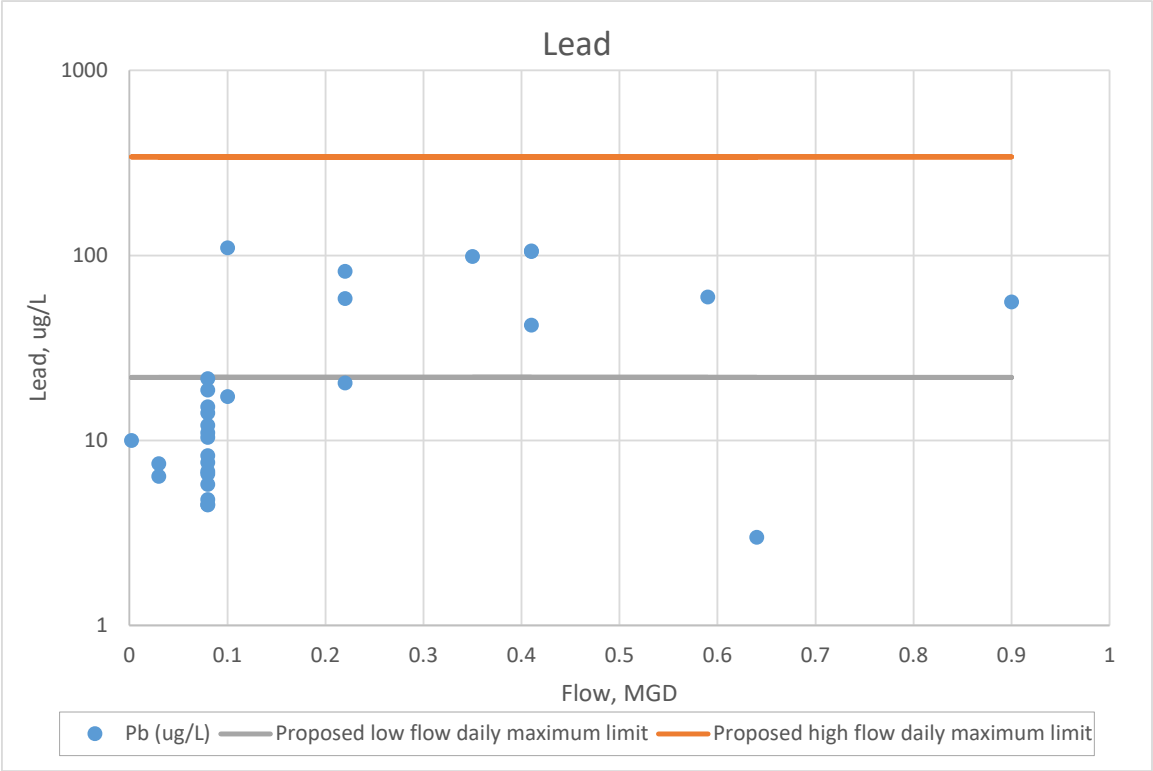


Figure 6. Effluent lead concentrations vs. discharge flow, January 2017 – August 2018

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

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

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

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

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

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

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

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

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

Section B – Reporting Requirements

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

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

b. The following shall be included as information which must be reported within 24 hours under this paragraph.
   i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
   ii. Any upset which exceeds any effluent limitation in the permit.
   iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.

c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

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

Section D – Administrative Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
March 1, 2015

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

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address the federal requirements.
2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW), privately owned facilities and sludge or biosolids generated at industrial facilities.
3. Sludge and Biosolids Use and Disposal Practices:
    a. The permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
    b. The permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
    c. The permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
4. Sludge Received from other Facilities:
    a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
    b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Actor under Chapter 644 RSMo.
8. In addition to STANDARD CONDITIONS, the Department may include sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Alternate Limits in the Site Specific Permit.
   Where deemed appropriate, the Department may require an individual site specific permit in order to authorize alternate limitations:
    a. A site specific permit must be obtained for each operating location, including application sites.
    b. To request a site specific permit, an individual permit application, permit fee, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the Department, as follows:
    a. The Department will prepare a permit modification and follow permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owner of the property located adjacent to each land application site, where appropriate.
    b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.

SECTION B – DEFINITIONS

1. Best Management Practices include agronomic loading rates, soil conservation practices and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Industrial wastewater means any wastewater, also known as process water, not defined as domestic wastewater. Per 40 CFR Part 122, process water means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.
8. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include wastewater treatment lagoons and constructed wetlands for wastewater treatment.
9. Operating location as defined in 10 CSR 20-2.010 is all contiguous lands owned, operated or controlled by one (1) person or by two (2) or more persons jointly or as tenants in common.
10. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the growing seasons after biosolids application.
11. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
12. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs)
13. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
14. Septage is the material pumped from residential septic tanks and similar treatment works (with a design population of less than 150 people). The standard for biosolids from septage is different from other sludges.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

1. This section applies to permittees that haul sludge to another treatment facility for disposal or use contract haulers to remove and dispose of sludge.
2. Permittees that use contract haulers are responsible for compliance with all the terms of this permit including final disposal, unless the hauler has a separate permit for sludge or biosolids disposal issued by the Department; or the hauler transports the sludge to another permitted treatment facility.
3. Haulers who land apply septage must obtain a state permit.
4. Testing of sludge, other than total solids content, is not required if sludge is hauled to a municipal wastewater treatment facility or other permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

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

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

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

SECTION G – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the facility description or the special conditions of the issued NPDES permit.
2. Land application sites within a 20 miles radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless otherwise specified in a site specific permit. If the permittee's land application site is greater than a 20 mile radius of the wastewater treatment facility, approval must be granted from the Department.
3. Land application shall not adversely affect a threatened or endangered species or its designated critical habitat.
4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
    a. This permit does not authorize the land application of domestic sludge except for when sludge meets the definition of biosolids.
    b. This permit authorizes "Class A or B" biosolids derived from domestic wastewater and/or process water sludge to be land applied onto grass land, crop land, timber or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
5. Public Contact Sites:

    Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the Department after two years of proper operation with acceptable testing documentation that shows the biosolids meet Class A criteria. A shorter length of testing will be allowed with prior approval from the Department. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site specific permit.
    a. After Class B biosolids have been land applied, public access must be restricted for 12 months.
    b. Class B biosolids are only land applied to root crops, home gardens or vegetable crops whose edible parts will not be for human consumption.
6. Agricultural and Silvicultural Sites:

    Septage – Based on Water Quality guide 422 (WQ422) published by the University of Missouri
    a. Haulers that land apply septage must obtain a state permit
    b. Do not apply more than 30,000 gallons of septage per acre per year.
    c. Septage tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to other mechanical type treatment facilities.
    d. To meet Class B sludge requirements, maintain septage at 12 pH for at least thirty (30) minutes before land application. 50 pounds of hydrated lime shall be added to each 1,000 gallons of septage in order to meet pathogen and vector stabilization for septage biosolids applied to crops, pastures or timberland.
    e. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.

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

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

TABLE 1

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

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

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

TABLE 2

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

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

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

TABLE 3

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

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

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

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

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

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

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

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

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

a. Use best management practices when applying biosolids.
b. Biosolids cannot discharge from the land application site
c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
e. Do not apply more than the agronomic rate of nitrogen needed.
f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop 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 and is in accordance with WQ426
    (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).
    [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application.
g. Buffer zones are as follows:
    i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;
    ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
    iii. 150 feet if dwellings;
    iv. 100 feet of wetlands or permanent flowing streams;
    v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.
h. Slope limitation for application sites are as follows;
    i. A slope 0 to 6 percent has no rate limitation
    ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels
    iii. Slopes > 12 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.
i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the Department.
k. Biosolids / sludge applicators must keep detailed records up to five years.

SECTION H – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical, industrial, and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the Department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Residuals that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
    a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
    b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
    c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre.
        i. PAN can be determined as follows:

        (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).

        [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application.
4. When closing a domestic wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered “septage” under the similar treatment works definition. See Section B of these standard conditions. Under the septage category, residuals may be left in place as follows:
    a. Testing for metals or fecal coliform is not required
    b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
    c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.
5. Residuals left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berm shall be demolished, and the site shall be graded and contain ≥70% vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoons and/or earthen structure and/or ash pond closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200
7. When closing a mechanical wastewater and/or industrial process wastewater plant; all sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
    a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain ≥70% vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
    b. Per 10 CSR 20-6.015(4)(B)6, Hazardous Waste shall not be land applied or disposed during industrial and mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations under 10 CSR 25.
    c. After demolition of the mechanical plant / industrial plant, the site must only contain clean fill defined in RSMo 260.200 (5) as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill or other beneficial use. Other solid wastes must be removed.
8. If sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or H, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.

SECTION I – MONITORING FREQUENCY

1. At a minimum, sludge or biosolids shall be tested for volume and percent total solids on a frequency that will accurately represent sludge quantities produced and disposed. Please see the table below.

TABLE 5

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

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

[2] Calculate plant available nitrogen (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.

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

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

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids. This data shall be used to calculate the dry tons of sludge applied per acre.
Note 2: Total Phosphorus: Total phosphorus and total potassium shall be tested at the same monitoring frequency as metals.
Note 3: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

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

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in these standard conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
2. Reporting period
    a. By January 28th of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
    b. Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.
3. Report Forms. The annual report shall be submitted on report forms provided by the Department or equivalent forms approved by the Department.
4. Reports shall be submitted as follows:

Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the Department and EPA. Other facilities need to report only to the Department. Reports shall be submitted to the addresses listed as follows:

DNR regional office listed in your permit
(see cover letter of permit)
ATTN: Sludge Coordinator

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

5. Annual report contents. The annual report shall include the following:
    a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the permit.
    b. Sludge or biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at the end of the year, and the quantity used or disposed.
    c. Gallons and % solids data used to calculate the dry ton amounts.
    d. Description of any unusual operating conditions.
    e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
        i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
        ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
    f. Contract Hauler Activities:
    If contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge or biosolids use permit.
    g. Land Application Sites:
        i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. 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, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.

RECEIVED

MAY 19 2014

WATER PROTECTION PROGRAM

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

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

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

1. This application is for:

- ☐ An operating permit and antidegradation review public notice
- ☐ A construction permit following an appropriate operating permit and antidegradation review public notice
- ☐ A construction permit and concurrent operating permit and antidegradation review public notice
- ☐ A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)
- ☐ An operating permit for a new or unpermitted facility — Construction Permit # _____
- ☑ An operating permit renewal: permit # MO- 0001856 — Expiration Date 11/12/2014
- ☐ An operating permit modification: permit # MO-_____ — Reason: _____

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

2. FACILITY

NAME		TELEPHONE WITH AREA CODE
The Doe Run Company - Fletcher Mine/Mill		(573) 689-2251
		FAX (573) 689-1192
ADDRESS (PHYSICAL)	CITY	STATE / ZIP CODE
230 County Road 849	Centerville	MO 63633

3. OWNER

NAME	E-MAIL ADDRESS	TELEPHONE WITH AREA CODE
The Doe Run Resources Corporation d/b/a The Doe Run Company		(573) 244-8113
		FAX (573) 244-8179
ADDRESS (MAILING)	CITY	STATE / ZIP CODE
P.O. Box 500	Viburnum	MO 65566

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

4. CONTINUING AUTHORITY

NAME		TELEPHONE WITH AREA CODE
Same as Owner		
		FAX
ADDRESS (MAILING)	CITY	STATE / ZIP CODE

5. OPERATOR

NAME	CERTIFICATE NUMBER	TELEPHONE WITH AREA CODE
Same as Owner		
		FAX
ADDRESS (MAILING)	CITY	STATE / ZIP CODE

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE WITH AREA CODE
Mark Cummings	Environmental Manager	(573) 244-8152
		FAX (573) 244-8179

7. ADDITIONAL FACILITY INFORMATION

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

001 NE ¼ SE ¼ Sec 24 T 32N R 2W REY County
UTM Coordinates Easting (X): 667409 Northing (Y): 4146420
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 NE ¼ SW ¼ Sec 19 T 32N R 1W REY County
UTM Coordinates Easting (X): 668478 Northing (Y): 4146559

003 SW ¼ SW ¼ Sec 19 T 32N R 1W REY County
UTM Coordinates Easting (X): _____ Northing (Y): _____

004 ____ ¼ ____ ¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

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

001 – SIC 1031 and NAICS 212231 002 – SIC 1031 and NAICS 212231
003 – SIC 1031 and NAICS 212231 004 – SIC _____ and NAICS _____

SE

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

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

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

NAME			
Robert and Sharon Bryant			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
1048 County Road 854	Centerville	MO	63633

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE WITH AREA CODE
Mark Cummings	(573) 244-8152
SIGNATURE	**DATE SIGNED**
Mark W. Cummings	5/15/14

MO 780-1479 (01-09)

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

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

HAVE YOU INCLUDED:

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH

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

FOR AGENCY USE ONLY	
CHECK NO	
DATE RECEIVED	FEE SUBMITTED

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

1.00 NAME OF FACILITY

The Doe Run Company - Fletcher Mine/Mill

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

MO-0001856

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 APPLICABLE 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 NE1/4 SE1/4 Sec 24 T 32N R 2W Reynolds County
002 NE1/4 SW 1/4 Sec 19 T 32N R 1W Reynolds County
003 SW1/4 SW 1/4 Sec 19 T 32N R 1W Reynolds County

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

OUTFALL NUMBER (LIST)	RECEIVING WATER
001	Unnamed Tributary to Bee Fork
002	Unnamed Tributary to Bee Fork
003	Unnamed Tributary to Bee Fork

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

Mining and Milling of Ores

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

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

1. OUTFALL NO.	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
(LIST)	A. OPERATION (LIST)	B. AVERAGE FLOW (INCLUDE UNITS) (MAXIMUM FLOW)	A. DESCRIPTION	B. LIST CODES FROM TABLE A
001	Mine Water Basin	5.3 MGD	Settling Basin	1-U
002	Tailings Basin Emer. Spillway	No Disharge	Settling Basin and	1-U
003	Tailings Basin Toe Drain	No Discharge	Settling Basin	1-U
	& Stormwater			

2.40 CONTINUED

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

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

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

2.50 MAXIMUM PRODUCTION

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

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

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

☐ **YES** *(COMPLETE c.)* ☑ **NO** *(GO TO SECTION 2.60)*

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

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

2.60 IMPROVEMENTS

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

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

1. IDENTIFICATION OF CONDITION AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
				A. REQUIRED	B. PROJECTED
Refer to Multi-media Consent Decree: U.S. and State of Mo. vs. Doe Run					

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

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

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

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

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

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
None from Table B			

3.10 BIOLOGICAL TOXICITY TESTING DATA

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

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

Fathead Minnow and Ceriodaphnia Dubia - Special Condition 11 of permit

3.20 CONTRACT ANALYSIS INFORMATION

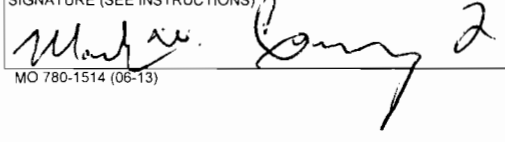
WERE ANY OF THE ANALYSES REPORTED PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

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

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
Pace Analytical Services, Inc.	808 West McKay Frontenac, KS 66763	620-235-0003	WET Testing, Fecal
Pace Analytical Services, Inc.	9608 Loiret Blvd. Lenexa, KS 66219	913-599-5665	Chemical Analysis

3.30 CERTIFICATION

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Mark Cummings	(573) 244-8152
SIGNATURE (SEE INSTRUCTIONS)	DATE SIGNED
	05/15/2014

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

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 002

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

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
A. Biochemical Oxygen Demand (BOD)	0	0					1	mg/L	lbs/day			
B. Chemical Oxygen Demand (COD)	0	0					1	mg/L	lbs/day			
C. Total organic Carbon (TOC)	1.1	114					1	mg/L	lbs/day			
D. Total Suspended Solids (TSS)	11	1137	11	1137	2.1	217	15	mg/L	lbs/day			
E. Ammonia *(as N)*	0.14	14.5					1	mg/L	lbs/day			
F. Flow	VALUE 12.39		VALUE 12.39		VALUE 8.17		15	MGD		VALUE		
G. Temperature *(winter)*	VALUE 12		VALUE 12		VALUE 9		4	°C		VALUE		
H. Temperature *(summer)*	VALUE 23		VALUE 23		VALUE 25		3	°C		VALUE		
I. pH	MINIMUM 8.00	MAXIMUM 8.38	MINIMUM 8.00	MAXIMUM 8.38			15	STANDARD UNITS				

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

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
CONVENTIONAL AND NONCONVENTIONAL POLLUTANTS														
A. Bromide (24959-67-9)	x		0.50	52					1	mg/L	lbs/day			
B. Chlorine, Total Residual	x		0.02	2					1	mg/L	lbs/day			
C. Color	x		5.0						1	Units				
D. Fecal Coliform	x		<10						1	cfu/100mL				
E. Fluoride (16984-48-8)	x		0.75	77					1	mg/L	lbs/day			
F. Nitrate - Nitrate *(as N)*	x		1.5	155					1	mg/L	lbs/day			

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
G. Nitrogen, Total Organic *(as N)*	x		1.7	176					1	mg/L	lbs/day			
H. Oil and Grease	x		0.92	95					1	mg/L	lbs/day			
I. Phosphorus *(as P)*, Total (7723-14-0)	x		NonDetect	0					1	mg/L	lbs/day			
J. Sulfate *(as SO^4)* (14808-79-8)	x		136	14053					1	mg/L	lbs/day			
K. Sulfide *(as S)*	x		NonDetect	0					1	mg/L	lbs/day			
L. Sulfite (as SO^3) (14265-45-3)	x		NonDetect	0					1	mg/L	lbs/day			
M. Surfactants	x		NonDetect	0					1	mg/L	lbs/day			
N. Aluminum, Total (7429-90-5)	x		58.6	6					1	ug/L	lbs/day			
O. Barium, Total (7440-39-3)	x		23.3	2					1	ug/L	lbs/day			
P. Boron, Total (7440-42-8)	x		120	12					1	ug/L	lbs/day			
Q. Cobalt, Total (7440-48-4)	x		18.7	2					1	ug/L	lbs/day			
R. Iron, Total (7439-89-6)	x		105	11					1	ug/L	lbs/day			
S. Magnesium, Total (7439-95-4)	x		33400	3451					1	ug/L	lbs/day			
T. Molybdenum, Total (7439-98-7)	x		NonDetect	0					1	ug/L	lbs/day			
U. Manganese, Total (7439-96-5)	x		48.1	5					1	ug/L	lbs/day			
V. Tin, Total (7440-31-5)	x		NonDetect	0					1	ug/L	lbs/day			
W. Titanium, Total (7440-32-6)	x		NonDetect	0					1	ug/L	lbs/day			

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-9)	x		NonDetect	0					1	ug/L	lbs/day			
2M. Arsenic, Total (7440-38-2)	x		9.6	1					1	ug/L	lbs/day			
3M. Beryllium, Total (7440-41-7)	x		NonDetect	0					1	ug/L	lbs/day			
4M. Cadmium, Total (7440-43-9)	x		0.4	0.03	0.4	0.03	0.3	0.02	15	ug/L	lbs/day			
5M. Chromium III (16065-83-1)	x		NonDetect	0					1	mg/L	lbs/day			
6M. Chromium VI (18540-29-9)	x		0.004	0.4					1	mg/L	lbs/day			
7M. Copper, Total (7440-50-8)	x		7	0.5	7	0.5	4	0.3	15	ug/L	lbs/day			
8M. Lead, Total (7439-92-1)	x		604	62	604	62	342	23	15	ug/L	lbs/day			
9M. Mercury, Total (7439-97-6)	x		NonDetect	0					1	ug/L	lbs/day			
10M. Nickel, Total (7440-02-0)	x		54	6					15	ug/L	lbs/day			
11M. Selenium, Total (7782-49-2)	x		NonDetect	0					1	ug/L	lbs/day			
12M. Silver, Total (7440-22-4)	x		NonDetect	0					1	ug/L	lbs/day			
13M. Thallium, Total (7440-28-0)	x		NonDetect	0					1	ug/L	lbs/day			
14M. Zinc, Total (7440-66-6)	x		178	18	178	18	126	8	15	ug/L	lbs/day			
15M. Cyanide, Amenable to Chlorination	x		NonDetect	0					1	mg/L	lbs/day			
16M. Phenols, Total	x		NonDetect	0					1	mg/L	lbs/day			
RADIOACTIVITY														
(1) Alpha Total	x		6.36						1	pCi/L				
(2) Beta Total	x		1.85						1	pCi/L				
(3) Radium Total	x		0.619						1	pCi/L				
(4) Radium 226 Total	x		0.518						1	pCi/L				

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH

FORM D – APPLICATION FOR DISCHARGE PERMIT – PRIMARY INDUSTRIES

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

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

1.00 NAME OF FACILITY

The Doe Run Company - Fletcher Mine/Mill

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

MO 0001856

This form is to be filled out in addition to forms A and C "Application for Discharge Permit" for the Industries listed below:

INDUSTRY CATEGORY

Adhesives and sealants
Aluminum forming
Auto and other laundries
Battery manufacturing
Coal mining
Coil coating
Copper forming
Electric and electronic compounds
Electroplating
Explosives manufacturing
Foundries
Gum and wood chemicals
Inorganic chemicals manufacturing
Iron and steel manufacturing
Leather tanning and finishing
Landfill
Mechanical products manufacturing
Nonferrous metals manufacturing
Ore mining
Organic chemicals manufacturing
Paint and ink formulation
Pesticides
Petroleum refining
Pharmaceutical preparations
Photographic equipment and supplies
Plastic and synthetic materials manufacturing
Plastic processing
Porcelain enameling
Printing and publishing
Pulp and paperboard mills
Rubber processing
Soap and detergent manufacturing
Steam electric power plants
Textile mills
Timber products processing

APPLICATION FOR DISCHARGE PERMIT
FORM D – PRIMARY INDUSTRIES

TABLE II

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO-0001856	001

1.30 If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-A for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-B for each pollutant you know or have reason to believe is present. Mark "X" in column 2-C for each pollutant you believe to be absent. If you mark either columns 2-A or 2-B for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part, please review each carefully. Complete one table (*all seven pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
				A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES			A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
	A. TEST-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS		A. CONCEN-TRATION	B. MASS	(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-9)	✓			NonDetect	ND					1	ug/L	lbs/day			
2M. Arsenic, Total (7440-38-2)	✓			9.6	1					1	ug/L	lbs/day			
3M. Beryllium, Total (7440-41-7)	✓			NonDetect	0					1	ug/L	lbs/day			
4M. Cadmium, Total (7440-43-9)	✓			0.4	.0.3	0.4	0.03	0.3	0.02	15	ug/L	lbs/day			
5M. Chromium III (16065-83-1)	✓			NonDetect	ND					1	mg/L	lbs/day			
6M. Chromium VI (18540-29-9)	✓			0.004	0.4					1	mg/L	lbs/day			
7M. Copper, Total (7440-50-8)	✓			7	0.5	7	0.5	4	0.3	15	ug/L	lbs/day			
8M. Lead, Total (7439-92-1)	✓			604	62	604	62	342	23	15	ug/L	lbs/day			
9M. Magnesium Total (7439-95-4)	✓			33400						1	ug/L	lbs/day			
10M. Mercury, Total (7439-97-6)	✓			NonDetect	ND					1	ug/L	lbs/day			
11M. Molybdenum Total (7439-98-7)	✓			NonDetect	ND					1	ug/L	lbs/day			
12M. Nickel, Total (7440-02-0)	✓			54	6					1	ug/L	lbs/day			
13M. Selenium, Total (7782-49-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
14M. Silver, Total (7440-22-4)	✓			NonDetect	ND					1	ug/L	lbs/day			
15M. Thallium, Total (7440-28-0)	✓			NonDetect	ND					1	ug/L	lbs/day			
16M. Tin Total (7440-31-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
17M. Titanium Total (7440-32-6)	✓			NonDetect	ND					1	ug/L	lbs/day			
18M. Zinc, Total (7440-66-6)	✓			178	18	178	18	126	8	15	ug/L	lbs/day			

CONTINUED FROM PAGE 3

19M. Cyanide, Amenable to Chlorination	✓			NonDetect	ND					1	mg/L	lbs/day			
20M. Phenols, Total	✓			NonDetect	ND					1	mg/L	lbs/day			
DIOXIN															
2,3,7,8 – Tetra – chlorodibenzo-P-Dioxin (1764-01-6)	✓			**DESCRIBE RESULTS** Not Detected											

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
				A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES			A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS		A. CONCENTRATION	B. MASS	(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	✓			NonDetect	ND					1	ug/L	lbs/day			
2V. Acrylonitrile (107-13-1)	✓			NonDetect	ND					1	ug/L	lbs/day			
3V. Benzene (71-43-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
4V. Bis (*Chloromethyl*) Ether (542-88-1)	✓			NonDetect	ND					1	ug/L	lbs/day			
5V. Bromoform (75-25-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
6V. Carbon Tetrachloride (56-23-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
7V. Chlorobenzene (108-90-7)	✓			NonDetect	ND					1	ug/L	lbs/day			
8V. Chlorodibromomethane (124-48-1)	✓			NonDetect	ND					1	ug/L	lbs/day			
9V. Chloroethane (75-00-3)	✓			NonDetect	ND					1	ug/L	lbs/day			
10V. 2-Chloroethylvinyl Ether (110-75-8)	✓			NonDetect	ND					1	ug/L	lbs/day			
11V. Chloroform (67-66-3)	✓			NonDetect	ND					1	ug/L	lbs/day			
12V. Dichlorobromomethane (75-27-4)	✓			NonDetect	ND					1	ug/L	lbs/day			
13V. Dichloro-difluoromethane (75-71-8)	✓			NonDetect	ND					1	ug/L	lbs/day			
14V. 1,1 – Dichloroethane (75-34-3)	✓			NonDetect	ND					1	ug/L	lbs/day			
15V. 1,2 – Dichloroethane (107-06-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
16V. 1,1 – Dichloroethylene (75-35-4)	✓			NonDetect	ND					1	ug/L	lbs/day			
17V. 1,3 – Dichloropropane (78-87-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
18V. 1,2 –Dichloropropylene (542-75-6)	✓			NonDetect	ND					1	ug/L	lbs/day			
19V. Ethylbenzene (100-41-4)	✓			NonDetect	ND					1	ug/L	lbs/day			
20V. Methyl Bromide (74-83-9)	✓			NonDetect	ND					1	ug/L	lbs/day			
21V. Methyl Chloride (74-87-3)	✓			NonDetect	ND					1	ug/L	lbs/day			

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NPDES # (IF ASSIGNED)	OUTFALL NUMBER
MO-0002003	002

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT						D. NO. OF ANALYSES	4. UNITS		5. INTAKE (optional)		
	A. TESTING RE-QUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)			A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC.MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
23V. 1,1,2,2 – Tetra-chloroethane (79-34-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
24V. Tetrachloroethylene (127-18-4)	✓			0.18	0.02					1	ug/L	lbs/day			
25V. Toluene (108-88-3)	✓			NonDetect	ND					1	ug/L	lbs/day			
26V. 1,2 – Trans Dichloroethylene (156-60-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
27V. 1,1,1 – Tri – chloroethane (71-55-6)	✓			NonDetect	ND					1	ug/L	lbs/day			
28V. 1,1,2 – Tri-chloroethane (79-00-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
29V. Trichloro – ethylene (79-01-6)	✓			NonDetect	ND					1	ug/L	lbs/day			
30V. Trichloro – fluoromethane (75-69-4)	✓			NonDetect	ND					1	ug/L	lbs/day			
31V. Vinyl Chloride (75-01-4)	✓			NonDetect	ND					1	ug/L	lbs/day			
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2 – Chlorophenol (95-57-8)	✓			NonDetect	ND					1	ug/L	lbs/day			
2A. 2,4 – Dichloro – phenol (120-83-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
3A. 2,4 – Dimethyl – phenol (105-67-9)	✓			NonDetect	ND					1	ug/L	lbs/day			
4A. 4,6 – Dinitro - O-Cresol (534-52-1)	✓			NonDetect	ND					1	ug/L	lbs/day			
5A. 2,4 – Dinitro – phenol (51-28-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
6A. 2-Nitrophenol (88-75-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
7A. 4-Nitrophenol (100-02-7)	✓			NonDetect	ND					1	ug/L	lbs/day			
8A. P – Chloro – M Cresol (59-50-7)	✓			NonDetect	ND					1	ug/L	lbs/day			
9A. Pentachloro – phenol (87-86-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
10A. Phenol (108-952)	✓			NonDetect	ND					1	ug/L	lbs/day			
11A. 2,4,6 – Trichloro-phenol (88-06-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
12A. 2 - methyl – 4,6 dinitrophenol (534-52-1)	✓			NonDetect	ND					1	ug/L	lbs/day			

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT						D. NO. OF ANALYSES	4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)			A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
2B. Acenaphtylene (208-96-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
3B. Anthracene (120-12-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
4B. Benzidine (92-87-5)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
5B. Benzo (a) Anthracene (56-55-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
6B. Benzo (a) Pyrene (50-32-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
7B. 3,4 – Benzofluoranthene (205-99-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
8B. Benzo (ghi) Perylene (191-24-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
9B. Benzo (k) Fluoranthene (207-08-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
11B. Bis (2-Chloroethyl) Ether (111-44-4)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
15B. Butyl Benzyl Phthalate (85-68-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
16B. 2-Chloronaphthalene (91-58-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
18B. Chrysene (218-01-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
19B. Dibenzo (a.h) Anthracene (53-70-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
20B. 1,2 – Dichlorobenzene (95-50-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
21B. 1,3 – Dichlorobenzene (541-73-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			

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NPDES # (*IF ASSIGNED*): MO-0001881 | OUTFALL NUMBER: 002

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1, 4-Dichlorobenzene (106-46-7)	✓			NonDetect	ND					1	ug/L	lb/day			
23B. 3, 3'-Dichlorobenzidine (91-94-1)	✓			NonDetect	ND					1	ug/L	lb/day			
24B. Diethyl Phthalate (84-66-2)	✓			NonDetect	ND					1	ug/L	lb/day			
25B. Dimethyl Phthalate (131-11-3)	✓			NonDetect	ND					1	ug/L	lb/day			
26B. Di-N-butyl Phthalate (84-74-2)	✓			NonDetect	ND					1	ug/L	lb/day			
27B. 2,4-Dinitrotoluene (121-14-2)	✓			NonDetect	ND					1	ug/L	lb/day			
28B. 2,6-Dinitrotoluene (606-20-2)	✓			NonDetect	ND					1	ug/L	lb/day			
29B. Di-N-Octyphthalate (117-84-0)	✓			NonDetect	ND					1	ug/L	lb/day			
30B. 1,2-Diphenylhydrazine (*as Azobenzene)* (122-66-7)	✓			NonDetect	ND					1	ug/L	lb/day			
31B. Fluoranthene (206-44-0)	✓			NonDetect	ND					1	ug/L	lb/day			
32B. Fluorene (86-73-7)	✓			NonDetect	ND					1	ug/L	lb/day			
33B. Hexachlorobenzene (87-68-3)	✓			NonDetect	ND					1	ug/L	lb/day			
34B. Hexachlorobutadiene (87-68-3)	✓			NonDetect	ND					1	ug/L	lb/day			
35B. Hexachloro-cyclopentadiene (77-47-4)	✓			NonDetect	ND					1	ug/L	lb/day			
36B. Hexachloroethane (67-72-1)	✓			NonDetect	ND					1	ug/L	lb/day			
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	✓			NonDetect	ND					1	ug/L	lb/day			
38B. Isophorone (78-59-1)	✓			NonDetect	ND					1	ug/L	lb/day			
39B. Naphthalene (91-20-3)	✓			NonDetect	ND					1	ug/L	lb/day			
40B. Nitrobenzene (98-95-3)	✓			NonDetect	ND					1	ug/L	lb/day			
41B. N-Nitro-sodimethylamine (62-75-9)	✓			NonDetect	ND					1	ug/L	lb/day			

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1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TES-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
42B. N-Nitroso N-Propylamine (621-64-7)	✓			NonDetect	ND					1	ug/L	lbs/day			
43B. N-Nitro-sodiphenylamine (86-30-6)	✓			NonDetect	ND					1	ug/L	lbs/day			
44B. Phenanthrene (85-01-8)	✓			NonDetect	ND					1	ug/L	lbs/day			
45B. Pyrene (129-00-0)	✓			NonDetect	ND					1	ug/L	lbs/day			
46B. 1,2,4-Tri chlorobenzene (120-82-1)	✓			NonDetect	ND					1	ug/L	lbs/day			
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
2P. α-BHC (319-84-6)	✓			NonDetect	ND					1	ug/L	lbs/day			
3P. β-BHC (319-84-6)	✓			NonDetect	ND					1	ug/L	lbs/day			
4P. γ-BHC (58-89-9)	✓			NonDetect	ND					1	ug/L	lbs/day			
5P. δ-BHC (319-86-8)	✓			NonDetect	ND					1	ug/L	lbs/day			
6P. Chlordane (57-74-9)	✓			NonDetect	ND					1	ug/L	lbs/day			
7P. 4,4'-DDT (50-29-3)	✓			NonDetect	ND					1	ug/L	lbs/day			
8P. 4,4'-DDE (72-55-9)	✓			NonDetect	ND					1	ug/L	lbs/day			
9P. 4,4'-DDD (72-54-8)	✓			NonDetect	ND					1	ug/L	lbs/day			
10P. Dieldrin (60-57-1)	✓			NonDetect	ND					1	ug/L	lbs/day			
11P. α-Endosulfan (115-29-7)	✓			NonDetect	ND					1	ug/L	lbs/day			
12P. β-Endosultan (115-29-7)	✓			NonDetect	ND					1	ug/L	lbs/day			
13P. Endosulfan Sulfate (1031-07-8)	✓			NonDetect	ND					1	ug/L	lbs/day			
14P. Endrin (72-20-8)	✓			NonDetect	ND					1	ug/L	lbs/day			
15P. Endrin Aldehyde (7421-93-4)	✓			NonDetect	ND					1	ug/L	lbs/day			
16P. Heptachlor (76-44-8)	✓			NonDetect	ND					1	ug/L	lbs/day			

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NPDES # (IF ASSIGNED)	OUTFALL NUMBER
MO-0001881	002

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT						D. NO. OF ANALYSES	4. UNITS		5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)			A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICISES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)	✓			NonDetect	ND					1	ug/L	lbs/day			
18P. PCB-1242 (53469-21-9)	✓			NonDetect	ND					1	ug/L	lbs/day			
19P. PBC-1254 (11097-69-1)	✓			NonDetect	ND					1	ug/L	lbs/day			
20P. PCB-1221 (11104-28-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
21P. PCB-1232 (11141-16-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
22P. PCB-1248 (12672-29-6)	✓			NonDetect	ND					1	ug/L	lbs/day			
23P. PCB-1260 (11096-82-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
24P. PCB-1016 (12674-11-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
25P. Toxaphene (8001-35-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
J. RADIOACTIVITY															
(1) Alpha Total	✓			6.36						1	pCi/L				
(2) Beta Total	✓			1.85						1	pCi/L				
(3) Radium Total	✓			0.619						1	pCi/L				
(4) Radium 226 Total	✓			0.518						1	pCi/L				

2.00 POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

A. IS ANY POLLUTANT LISTED IN ITEM 1.30 A SUBSTANCE OR A COMPONENT OF A SUBSTANCE WHICH YOU DO OR EXPECT THAT YOU WILL OVER THE NEXT FIVE YEARS USE OR MANUFACTURE AS AN INTERMEDIATE OR FINAL PRODUCT OR BYPRODUCT?

☐ **YES** *(LIST ALL SUCH POLLUTANTS BELOW)* ■ **NO** *(GO TO B)*

B. ARE YOUR OPERATIONS SUCH THAT YOUR RAW MATERIALS, PROCESSES OR PRODUCTS CAN REASONABLE BE EXPECTED TO VARY SO THAT YOUR DISCHARGES OF POLLUTANTS MAY DURING THE NEXT FIVE YEARS EXCEED TWO TIMES THE MAXIMUM VALUES REPORTED IN ITEM 1.30?

☐ **YES** *(COMPLETE C BELOW)* ■ **NO** *(GO TO SECTION 3.00)*

C. IF YOU ANSWERED "YES" TO ITEM B, EXPLAIN BELOW AND DESCRIBE IN DETAIL THE SOURCES AND EXPECTED LEVELS OF SUCH POLLUTANTS THAT YOU ANTICIPATE WILL BE DISCHARGED FROM EACH OUTFALL OVER THE NEXT FIVE YEARS, TO THE BEST OF YOUR ABILIITY AT THIS TIME. CONTINUE ON ADDITIONAL SHEETS IF YOU NEED MORE SPACE.

3.00 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED IN 1.30 PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

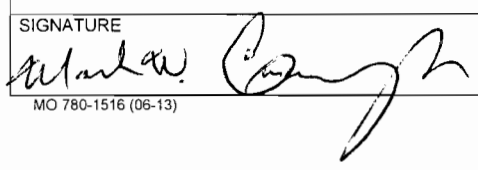
■ **YES** *(LIST THE NAME, ADDRESS, AND TELEPHONE NUMBER OF, AND ANALYZED BY, EACH SUCH LABORATORY OR FIRM BELOW)*

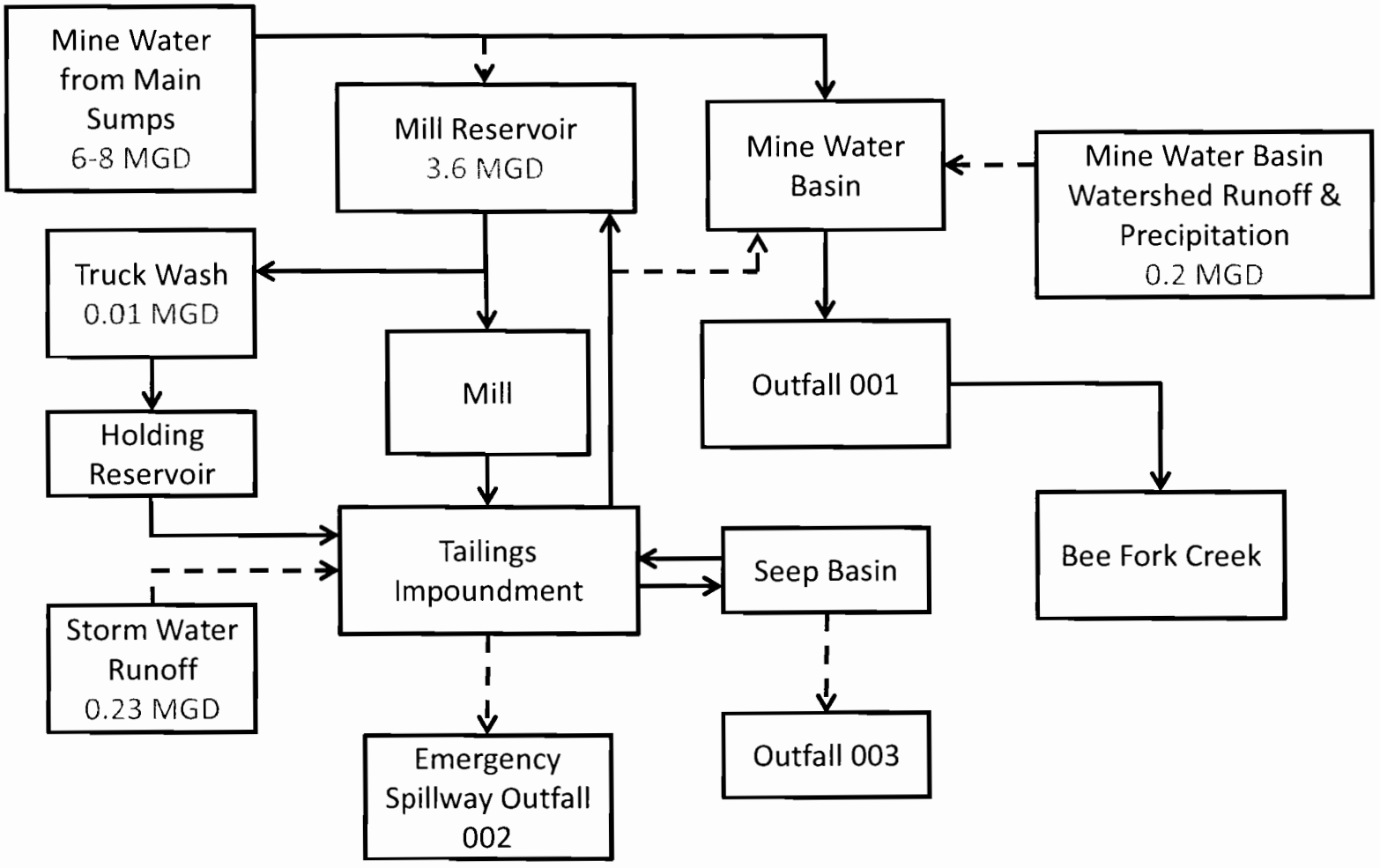
☐ **NO** *(GO TO SECTION 4.00)*

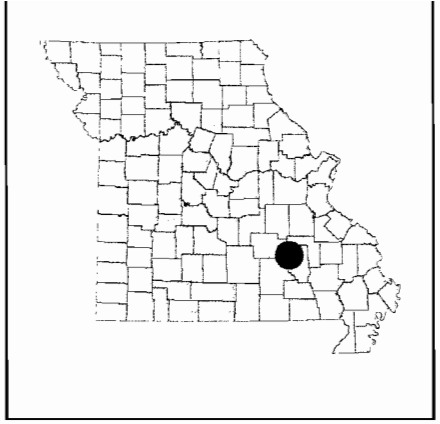
A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
Pace Analytical Services, Inc.	9608 Loiret Blvd	(913) 599-5665	All
	Lenexa, KS 66219		

4.00 CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining 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)	PHONE NUMBER (AREA CODE AND NUMBER)
Mark Cummings	(573) 244-8152
SIGNATURE 	DATE SIGNED 05/15/2014


Mine Water from Main Sumps 6-8 MGD
Mill Reservoir 3.6 MGD
Mine Water Basin
Mine Water Basin Watershed Runoff & Precipitation 0.2 MGD
Truck Wash 0.01 MGD
Mill
Outfall 001
Holding Reservoir
Tailings Impoundment
Seep Basin
Bee Fork Creek
Storm Water Runoff 0.23 MGD
Emergency Spillway Outfall 002
Outfall 003



THE DOE RUN COMPANY

N
W E
S

1 in = 777 feet

0 0.05 0.1 0.2 0.3 Miles

Legend

- Fletcher Permit Outfalls - 05132014

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

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED

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

1. This application is for:
- ☐ An operating permit and antidegradation review public notice
- ☐ A construction permit following an appropriate operating permit and antidegradation review public notice
- ☐ A construction permit and concurrent operating permit and antidegradation review public notice
- ☐ A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)
- ☐ An operating permit for a new or unpermitted facility — Construction Permit # _____
- ☑ An operating permit renewal: permit # MO- 0001856 — Expiration Date 11/12/2014
- ☐ An operating permit modification: permit # MO-_____ — Reason: _____

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

2. FACILITY

NAME		TELEPHONE WITH AREA CODE / FAX	
The Doe Run Company - Fletcher Mine/Mill		(573) 689-2251 / FAX (573) 689-1192	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
230 County Road 849	Centerville	MO	63633

3. OWNER

NAME	E-MAIL ADDRESS	TELEPHONE WITH AREA CODE / FAX	
The Doe Run Resources Corporation d/b/a The Doe Run Company		(573) 244-8113 / FAX (573) 244-8179	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
P.O. Box 500	Viburnum	MO	65566

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

4. CONTINUING AUTHORITY

NAME		TELEPHONE WITH AREA CODE / FAX	
Same as Owner			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

5. OPERATOR

NAME	CERTIFICATE NUMBER	TELEPHONE WITH AREA CODE / FAX	
Same as Owner			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE WITH AREA CODE / FAX
Mark Cummings	Environmental Manager	(573) 244-8152 / FAX (573) 244-8179

7. ADDITIONAL FACILITY INFORMATION

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

001 NE ¼ SE ¼ Sec 24 T 32N R 2W REY County
UTM Coordinates Easting (X): 667409 Northing (Y): 4146420
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 NE ¼ SW ¼ Sec 19 T 32N R 1W REY County
UTM Coordinates Easting (X): 668478 Northing (Y): 4146559

003 SW ¼ SW ¼ Sec 19 T 32N R 1W REY County
UTM Coordinates Easting (X): Northing (Y):

004 ¼ ¼ Sec T R County
UTM Coordinates Easting (X): Northing (Y):

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

001 – SIC 1031 and NAICS 212231 002 – SIC 1031 and NAICS 212231
003 – SIC 1031 and NAICS 212231 004 – SIC _____ and NAICS _____

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

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

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

NAME			
Robert and Sharon Bryant			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
1048 County Road 854	Centerville	MO	63633

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE WITH AREA CODE
Mark Cummings	(573) 244-8152
SIGNATURE	**DATE SIGNED**
Mark Cummings	5/15/14

MO 780-1479 (01-09)

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

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

HAVE YOU INCLUDED:

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH

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

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

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

1.00 NAME OF FACILITY

The Doe Run Company - Fletcher Mine/Mill

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

MO-0001856

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 APPLICABLE 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 NE1/4 SE1/4 Sec 24 T 32N R 2W Reynolds County
002 NE1/4 SW 1/4 Sec 19 T 32N R 1W Reynolds County
003 SW1/4 SW 1/4 Sec 19 T 32N R 1W Reynolds County

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

OUTFALL NUMBER (LIST)	RECEIVING WATER
001	Unnamed Tributary to Bee Fork
002	Unnamed Tributary to Bee Fork
003	Unnamed Tributary to Bee Fork

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

Mining and Milling of Ores

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

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

1. OUTFALL NO.	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
(LIST)	A. OPERATION (LIST)	B. AVERAGE FLOW (INCLUDE UNITS) (MAXIMUM FLOW)	A. DESCRIPTION	B. LIST CODES FROM TABLE A
001	Mine Water Basin	5.3 MGD	Settling Basin	1-U
002	Tailings Basin Emer. Spillway	No Disharge	Settling Basin and	1-U
003	Tailings Basin Toe Drain	No Discharge	Settling Basin	1-U
	& Stormwater			

2.40 CONTINUED

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

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

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

2.50 MAXIMUM PRODUCTION

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

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

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

☐ **YES** *(COMPLETE c.)* ☑ **NO** *(GO TO SECTION 2.60)*

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

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

2.60 IMPROVEMENTS

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

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

1. IDENTIFICATION OF CONDITION AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
				A. REQUIRED	B. PROJECTED
Refer to Multi-media Consent Decree: U.S. and State of Mo. vs. Doe Run					

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

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

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

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

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

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
None from Table B			

3.10 BIOLOGICAL TOXICITY TESTING DATA

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

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

Fathead Minnow and Ceriodaphnia Dubia - Special Condition 11 of permit

3.20 CONTRACT ANALYSIS INFORMATION

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

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

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
Pace Analytical Services, Inc.	808 West McKay Frontenac, KS 66763	620-235-0003	WET Testing, Fecal
Pace Analytical Services, Inc.	9608 Loiret Blvd. Lenexa, KS 66219	913-599-5665	Chemical Analysis

3.30 CERTIFICATION

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Mark Cummings	(573) 244-8152
SIGNATURE (SEE INSTRUCTIONS)	DATE SIGNED
Mark W. Cummings	05/15/2014

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

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 002

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

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
A. Biochemical Oxygen Demand (BOD)	0	0					1	mg/L	lbs/day			
B. Chemical Oxygen Demand (COD)	0	0					1	mg/L	lbs/day			
C. Total organic Carbon (TOC)	1.1	114					1	mg/L	lbs/day			
D. Total Suspended Solids (TSS)	11	1137	11	1137	2.1	217	15	mg/L	lbs/day			
E. Ammonia *(as N)*	0.14	14.5					1	mg/L	lbs/day			
F. Flow	VALUE 12.39		VALUE 12.39		VALUE 8.17		15	MGD		VALUE		
G. Temperature *(winter)*	VALUE 12		VALUE 12		VALUE 9		4	°C		VALUE		
H. Temperature *(summer)*	VALUE 23		VALUE 23		VALUE 25		3	°C		VALUE		
I. pH	MINIMUM 8.00	MAXIMUM 8.38	MINIMUM 8.00	MAXIMUM 8.38			15	STANDARD UNITS				

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

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
CONVENTIONAL AND NONCONVENTIONAL POLLUTANTS														
A. Bromide (24959-67-9)	x		0.50	52					1	mg/L	lbs/day			
B. Chlorine, Total Residual	x		0.02	2					1	mg/L	lbs/day			
C. Color	x		5.0						1	Units				
D. Fecal Coliform	x		<10						1	cfu/100mL				
E. Fluoride (16984-48-8)	x		0.75	77					1	mg/L	lbs/day			
F. Nitrate - Nitrate *(as N)*	x		1.5	155					1	mg/L	lbs/day			

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
G. Nitrogen, Total Organic *(as N)*	x		1.7	176					1	mg/L	lbs/day			
H. Oil and Grease	x		0.92	95					1	mg/L	lbs/day			
I. Phosphorus *(as P)*, Total (7723-14-0)	x		NonDetect	0					1	mg/L	lbs/day			
J. Sulfate *(as SO^4)* (14808-79-8)	x		136	14053					1	mg/L	lbs/day			
K. Sulfide *(as S)*	x		NonDetect	0					1	mg/L	lbs/day			
L. Sulfite (as SO^3) (14265-45-3)	x		NonDetect	0					1	mg/L	lbs/day			
M. Surfactants	x		NonDetect	0					1	mg/L	lbs/day			
N. Aluminum, Total (7429-90-5)	x		58.6	6					1	ug/L	lbs/day			
O. Barium, Total (7440-39-3)	x		23.3	2					1	ug/L	lbs/day			
P. Boron, Total (7440-42-8)	x		120	12					1	ug/L	lbs/day			
Q. Cobalt, Total (7440-48-4)	x		18.7	2					1	ug/L	lbs/day			
R. Iron, Total (7439-89-6)	x		105	11					1	ug/L	lbs/day			
S. Magnesium, Total (7439-95-4)	x		33400	3451					1	ug/L	lbs/day			
T. Molybdenum, Total (7439-98-7)	x		NonDetect	0					1	ug/L	lbs/day			
U. Manganese, Total (7439-96-5)	x		48.1	5					1	ug/L	lbs/day			
V. Tin, Total (7440-31-5)	x		NonDetect	0					1	ug/L	lbs/day			
W. Titanium, Total (7440-32-6)	x		NonDetect	0					1	ug/L	lbs/day			

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-9)	x		NonDetect	0					1	ug/L	lbs/day			
2M. Arsenic, Total (7440-38-2)	x		9.6	1					1	ug/L	lbs/day			
3M. Beryllium, Total (7440-41-7)	x		NonDetect	0					1	ug/L	lbs/day			
4M. Cadmium, Total (7440-43-9)	x		0.4	0.03	0.4	0.03	0.3	0.02	15	ug/L	lbs/day			
5M. Chromium III (16065-83-1)	x		NonDetect	0					1	mg/L	lbs/day			
6M. Chromium VI (18540-29-9)	x		0.004	0.4					1	mg/L	lbs/day			
7M. Copper, Total (7440-50-8)	x		7	0.5	7	0.5	4	0.3	15	ug/L	lbs/day			
8M. Lead, Total (7439-92-1)	x		604	62	604	62	342	23	15	ug/L	lbs/day			
9M. Mercury, Total (7439-97-6)	x		NonDetect	0					1	ug/L	lbs/day			
10M. Nickel, Total (7440-02-0)	x		54	6					15	ug/L	lbs/day			
11M. Selenium, Total (7782-49-2)	x		NonDetect	0					1	ug/L	lbs/day			
12M. Silver, Total (7440-22-4)	x		NonDetect	0					1	ug/L	lbs/day			
13M. Thallium, Total (7440-28-0)	x		NonDetect	0					1	ug/L	lbs/day			
14M. Zinc, Total (7440-66-6)	x		178	18	178	18	126	8	15	ug/L	lbs/day			
15M. Cyanide, Amenable to Chlorination	x		NonDetect	0					1	mg/L	lbs/day			
16M. Phenols, Total	x		NonDetect	0					1	mg/L	lbs/day			
RADIOACTIVITY														
(1) Alpha Total	x		6.36						1	pCi/L				
(2) Beta Total	x		1.85						1	pCi/L				
(3) Radium Total	x		0.619						1	pCi/L				
(4) Radium 226 Total	x		0.518						1	pCi/L				

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH

FORM D – APPLICATION FOR DISCHARGE PERMIT – PRIMARY INDUSTRIES

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

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

1.00 NAME OF FACILITY

The Doe Run Company - Fletcher Mine/Mill

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

MO 0001856

This form is to be filled out in addition to forms A and C "Application for Discharge Permit" for the Industries listed below:

INDUSTRY CATEGORY

- Adhesives and sealants
- Aluminum forming
- Auto and other laundries
- Battery manufacturing
- Coal mining
- Coil coating
- Copper forming
- Electric and electronic compounds
- Electroplating
- Explosives manufacturing
- Foundries
- Gum and wood chemicals
- Inorganic chemicals manufacturing
- Iron and steel manufacturing
- Leather tanning and finishing
- Landfill
- Mechanical products manufacturing
- Nonferrous metals manufacturing
- Ore mining
- Organic chemicals manufacturing
- Paint and ink formulation
- Pesticides
- Petroleum refining
- Pharmaceutical preparations
- Photographic equipment and supplies
- Plastic and synthetic materials manufacturing
- Plastic processing
- Porcelain enameling
- Printing and publishing
- Pulp and paperboard mills
- Rubber processing
- Soap and detergent manufacturing
- Steam electric power plants
- Textile mills
- Timber products processing

APPLICATION FOR DISCHARGE PERMIT
FORM D – PRIMARY INDUSTRIES

TABLE II

NPDES # *(IF ASSIGNED)*	OUTFALL NUMBER
MO-0001856	001

1.30 If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-A for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-B for each pollutant you know or have reason to believe is present. Mark "X" in column 2-C for each pollutant you believe to be absent. If you mark either columns 2-A or 2-B for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part, please review each carefully. Complete one table (*all seven pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. TEST-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-9)	✓			NonDetect	ND					1	ug/L	lbs/day			
2M. Arsenic, Total (7440-38-2)	✓			9.6	1					1	ug/L	lbs/day			
3M. Beryllium, Total (7440-41-7)	✓			NonDetect	0					1	ug/L	lbs/day			
4M. Cadmium, Total (7440-43-9)	✓			0.4	.0.3	0.4	0.03	0.3	0.02	15	ug/L	lbs/day			
5M. Chromium III (16065-83-1)	✓			NonDetect	ND					1	mg/L	lbs/day			
6M. Chromium VI (18540-29-9)	✓			0.004	0.4					1	mg/L	lbs/day			
7M. Copper, Total (7440-50-8)	✓			7	0.5	7	0.5	4	0.3	15	ug/L	lbs/day			
8M. Lead, Total (7439-92-1)	✓			604	62	604	62	342	23	15	ug/L	lbs/day			
9M. Magnesium Total (7439-95-4)	✓			33400						1	ug/L	lbs/day			
10M. Mercury, Total (7439-97-6)	✓			NonDetect	ND					1	ug/L	lbs/day			
11M. Molybdenum Total (7439-98-7)	✓			NonDetect	ND					1	ug/L	lbs/day			
12M. Nickel, Total (7440-02-0)	✓			54	6					1	ug/L	lbs/day			
13M. Selenium, Total (7782-49-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
14M. Silver, Total (7440-22-4)	✓			NonDetect	ND					1	ug/L	lbs/day			
15M. Thallium, Total (7440-28-0)	✓			NonDetect	ND					1	ug/L	lbs/day			
16M. Tin Total (7440-31-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
17M. Titanium Total (7440-32-6)	✓			NonDetect	ND					1	ug/L	lbs/day			
18M. Zinc, Total (7440-66-6)	✓			178	18	178	18	126	8	15	ug/L	lbs/day			

CONTINUED FROM PAGE 3

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" A. TESTING REQUIRED	2. MARK "X" B. BELIEVED PRESENT	2. MARK "X" C. BELIEVED ABSENT	3. EFFLUENT A. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT A. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT B. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	3. EFFLUENT B. MAXIMUM 30 DAY VALUE (if available) (2) MASS	3. EFFLUENT C. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	3. EFFLUENT C. LONG TERM AVRG. VALUE (if available) (2) MASS	3. EFFLUENT D. NO. OF ANALYSES	4. UNITS A. CONCENTRATION	4. UNITS B. MASS	5. INTAKE (optional) A. LONG TERM AVRG. VALUE (1) CONCENTRATION	5. INTAKE (optional) A. LONG TERM AVRG. VALUE (2) MASS	5. INTAKE (optional) B. NO OF ANALYSES
19M. Cyanide, Amenable to Chlorination	☑	☐	☐	NonDetect	ND					1	mg/L	lbs/day			
20M. Phenols, Total	☑	☐	☐	NonDetect	ND					1	mg/L	lbs/day			
DIOXIN															
2,3,7,8 – Tetra – chlorodibenzo-P-Dioxin (1764-01-6)	☑	☐	☐	**DESCRIBE RESULTS** Not Detected											
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
2V. Acrylonitrile (107-13-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
3V. Benzene (71-43-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
4V. Bis (*Chloromethyl*) Ether (542-88-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
5V. Bromoform (75-25-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
6V. Carbon Tetrachloride (56-23-5)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
7V. Chlorobenzene (108-90-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
8V. Chlorodibromomethane (124-48-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
9V. Chloroethane (75-00-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
10V. 2-Chloroethylvinyl Ether (110-75-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
11V. Chloroform (67-66-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
12V. Dichlorobromomethane (75-27-4)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
13V. Dichloro-difluoromethane (75-71-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
14V. 1,1 – Dichloroethane (75-34-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
15V. 1,2 – Dichloroethane (107-06-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
16V. 1,1 – Dichloroethylene (75-35-4)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
17V. 1,3 – Dichloropropane (78-87-5)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
18V. 1,2 –Dichloropropylene (542-75-6)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
19V. Ethylbenzene (100-41-4)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
20V. Methyl Bromide (74-83-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
21V. Methyl Chloride (74-87-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			

CONTINUED FROM THE FRONT

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO-0002003	002

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT						D. NO. OF ANALYSES	4. UNITS		5. INTAKE (*optional*)		
	A. TESTING RE-QUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)			A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC.MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
23V. 1,1,2,2 – Tetra-chloroethane (79-34-5)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
24V. Tetrachloroethylene (127-18-4)	☑	☐	☐	0.18	0.02					1	ug/L	lbs/day			
25V. Toluene (108-88-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
26V. 1,2 – Trans Dichloroethylene (156-60-5)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
27V. 1,1,1 – Tri – chloroethane (71-55-6)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
28V. 1,1,2 – Tri-chloroethane (79-00-5)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
29V. Trichloro – ethylene (79-01-6)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
30V. Trichloro – fluoromethane (75-69-4)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
31V. Vinyl Chloride (75-01-4)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2 – Chlorophenol (95-57-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
2A. 2,4 – Dichloro – phenol (120-83-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
3A. 2,4 – Dimethyl – phenol (105-67-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
4A. 4,6 – Dinitro - O-Cresol (534-52-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
5A. 2,4 – Dinitro – phenol (51-28-5)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
6A. 2-Nitrophenol (88-75-5)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
7A. 4-Nitrophenol (100-02-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
8A. P – Chloro – M Cresol (59-50-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
9A. Pentachloro – phenol (87-86-5)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
10A. Phenol (108-952)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
11A. 2,4,6 – Trichloro-phenol (88-06-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
12A. 2 - methyl – 4,6 dinitrophenol (534-52-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
2B. Acenaphtylene (208-96-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
3B. Anthracene (120-12-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
4B. Benzidine (92-87-5)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
5B. Benzo (a) Anthracene (56-55-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
6B. Benzo (a) Pyrene (50-32-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
7B. 3,4 – Benzofluoranthene (205-99-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
8B. Benzo (ghi) Perylene (191-24-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
9B. Benzo (k) Fluoranthene (207-08-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
11B. Bis (2-Chloroethyl) Ether (111-44-4)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
15B. Butyl Benzyl Phthalate (85-68-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
16B. 2-Chloronaphthalene (91-58-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
18B. Chrysene (218-01-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
19B. Dibenzo (a.h) Anthracene (53-70-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
20B. 1,2 – Dichlorobenzene (95-50-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
21B. 1,3 – Dichlorobenzene (541-73-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			

CONTINUED FROM PAGE 5

NPDES # (IF ASSIGNED)	OUTFALL NUMBER
MO-0001881	002

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1, 4-Dichlorobenzene (106-46-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
23B. 3, 3'-Dichlorobenzidine (91-94-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
24B. Diethyl Phthalate (84-66-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
25B. Dimethyl Phthalate (131-11-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
26B. Di-N-butyl Phthalate (84-74-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
27B. 2,4-Dinitrotoluene (121-14-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
28B. 2,6-Dinitrotoluene (606-20-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
29B. Di-N-Octyphthalate (117-84-0)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
31B. Fluoranthene (206-44-0)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
32B. Fluorene (86-73-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
33B. Hexachlorobenzene (87-68-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
34B. Hexachlorobutadiene (87-68-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
35B. Hexachloro-cyclopentadiene (77-47-4)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
36B. Hexachloroethane (67-72-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
38B. Isophorone (78-59-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
39B. Naphthalene (91-20-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
40B. Nitrobenzene (98-95-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			
41B. N-Nitro-sodimethylamine (62-75-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lb/day			

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TES-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
42B. N-Nitroso N-Propylamine (621-64-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
43B. N-Nitro-sodiphenylamine (86-30-6)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
44B. Phenanthrene (85-01-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
45B. Pyrene (129-00-0)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
46B. 1,2,4-Tri chlorobenzene (120-82-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
2P. α-BHC (319-84-6)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
3P. β-BHC (319-84-6)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
4P. γ-BHC (58-89-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
5P. δ-BHC (319-86-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
6P. Chlordane (57-74-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
7P. 4,4'-DDT (50-29-3)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
8P. 4,4'-DDE (72-55-9)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
9P. 4,4'-DDD (72-54-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
10P. Dieldrin (60-57-1)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
11P. α-Endosulfan (115-29-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
12P. β-Endosultan (115-29-7)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
13P. Endosulfan Sulfate (1031-07-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
14P. Endrin (72-20-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
15P. Endrin Aldehyde (7421-93-4)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			
16P. Heptachlor (76-44-8)	☑	☐	☐	NonDetect	ND					1	ug/L	lbs/day			

CONTINUED ON PAGE 8

CONTINUED FROM PAGE 7

NPDES # (IF ASSIGNED): MO-0001881 | OUTFALL NUMBER: 002

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICISES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)	✓			NonDetect	ND					1	ug/L	lbs/day			
18P. PCB-1242 (53469-21-9)	✓			NonDetect	ND					1	ug/L	lbs/day			
19P. PBC-1254 (11097-69-1)	✓			NonDetect	ND					1	ug/L	lbs/day			
20P. PCB-1221 (11104-28-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
21P. PCB-1232 (11141-16-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
22P. PCB-1248 (12672-29-6)	✓			NonDetect	ND					1	ug/L	lbs/day			
23P. PCB-1260 (11096-82-5)	✓			NonDetect	ND					1	ug/L	lbs/day			
24P. PCB-1016 (12674-11-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
25P. Toxaphene (8001-35-2)	✓			NonDetect	ND					1	ug/L	lbs/day			
J. RADIOACTIVITY															
(1) Alpha Total	✓			6.36						1	pCi/L				
(2) Beta Total	✓			1.85						1	pCi/L				
(3) Radium Total	✓			0.619						1	pCi/L				
(4) Radium 226 Total	✓			0.518						1	pCi/L				

2.00 POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

A. IS ANY POLLUTANT LISTED IN ITEM 1.30 A SUBSTANCE OR A COMPONENT OF A SUBSTANCE WHICH YOU DO OR EXPECT THAT YOU WILL OVER THE NEXT FIVE YEARS USE OR MANUFACTURE AS AN INTERMEDIATE OR FINAL PRODUCT OR BYPRODUCT?

☐ **YES** *(LIST ALL SUCH POLLUTANTS BELOW)* ■ **NO** *(GO TO B)*

B. ARE YOUR OPERATIONS SUCH THAT YOUR RAW MATERIALS, PROCESSES OR PRODUCTS CAN REASONABLE BE EXPECTED TO VARY SO THAT YOUR DISCHARGES OF POLLUTANTS MAY DURING THE NEXT FIVE YEARS EXCEED TWO TIMES THE MAXIMUM VALUES REPORTED IN ITEM 1.30?

☐ **YES** *(COMPLETE C BELOW)* ■ **NO** *(GO TO SECTION 3.00)*

C. IF YOU ANSWERED "YES" TO ITEM B, EXPLAIN BELOW AND DESCRIBE IN DETAIL THE SOURCES AND EXPECTED LEVELS OF SUCH POLLUTANTS THAT YOU ANTICIPATE WILL BE DISCHARGED FROM EACH OUTFALL OVER THE NEXT FIVE YEARS, TO THE BEST OF YOUR ABILIITY AT THIS TIME. CONTINUE ON ADDITIONAL SHEETS IF YOU NEED MORE SPACE.

3.00 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED IN 1.30 PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

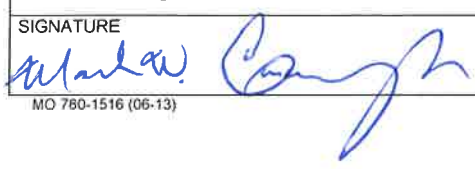
■ **YES** *(LIST THE NAME, ADDRESS, AND TELEPHONE NUMBER OF, AND ANALYZED BY, EACH SUCH LABORATORY OR FIRM BELOW)*

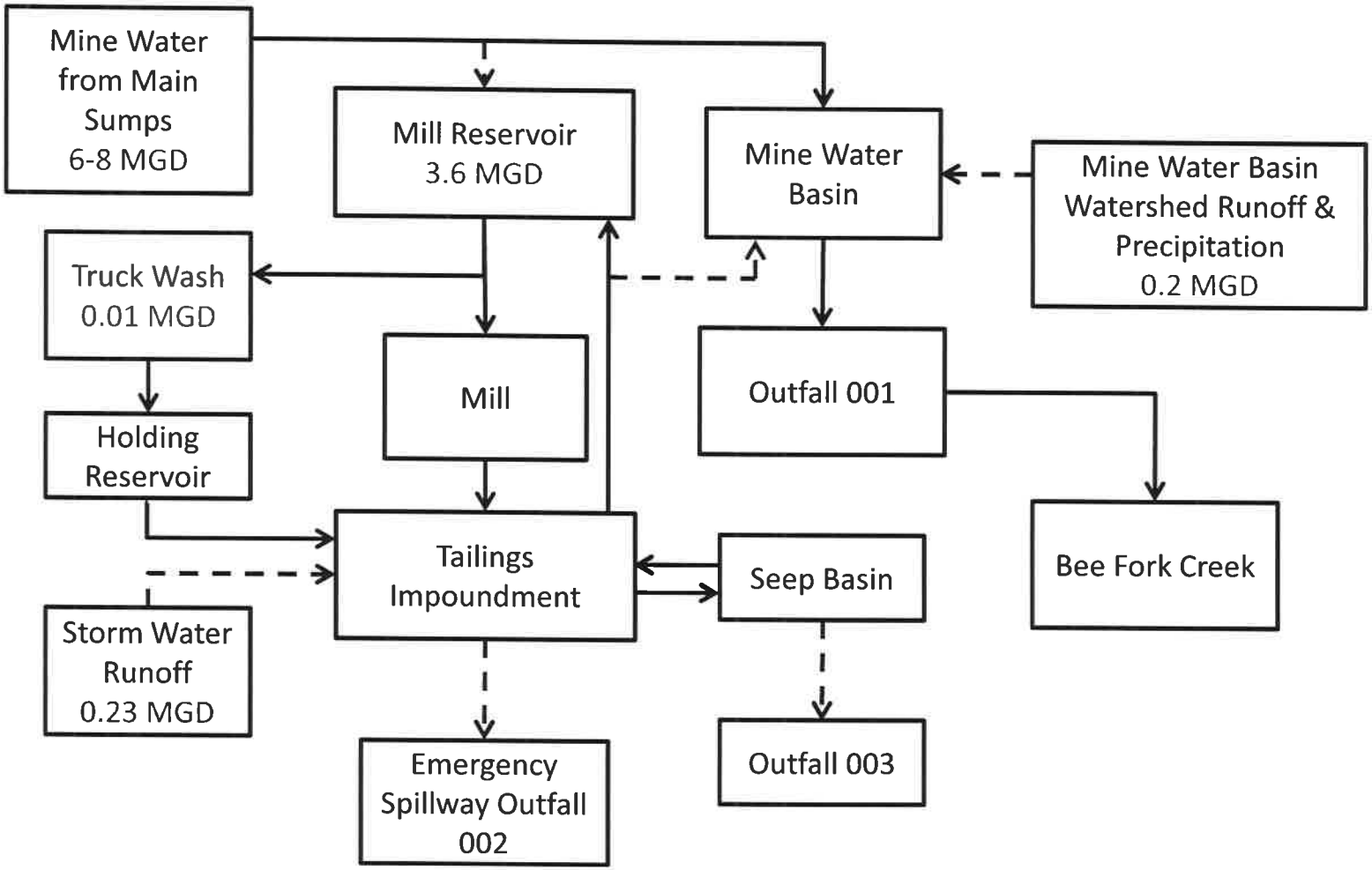
☐ **NO** *(GO TO SECTION 4.00)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
Pace Analytical Services, Inc.	9608 Loiret Blvd	(913) 599-5665	All
	Lenexa, KS 66219		

4.00 CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining 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)	PHONE NUMBER (AREA CODE AND NUMBER)
Mark Cummings	(573) 244-8152
SIGNATURE 	DATE SIGNED 05/15/2014


Mine Water from Main Sumps 6-8 MGD
Mill Reservoir 3.6 MGD
Mine Water Basin
Mine Water Basin Watershed Runoff & Precipitation 0.2 MGD
Truck Wash 0.01 MGD
Mill
Outfall 001
Holding Reservoir
Tailings Impoundment
Seep Basin
Bee Fork Creek
Storm Water Runoff 0.23 MGD
Emergency Spillway Outfall 002
Outfall 003

Doe Run Resources - Environmental Surface Features Map

Fletcher Mine / Mill (MO-0001856)

THE DOE RUN COMPANY

N
W E
S

1 in = 777 feet

0 0.05 0.1 0.2 0.3 Miles

Legend

Fletcher Permit Outfalls - 05132014

Outfall	Location	UTM_X	UTM_Y
1	Fletcher	667392.5607	4146380.89879
2	Fletcher	668499.0218	4146552.8748
3	Fletcher	668266.0419	4145838.13067