

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-0000710 |
| Owner: | HarbisonWalker International, Inc. |
| Address: | 1305 Cherrington Parkway, Suite 100, Moon Township, PA 15108 |
| Continuing Authority: | HarbisonWalker International, Inc. |
| Address: | 1305 Cherrington Parkway, Suite 100, Moon Township, PA 15108 |
| Facility Name: | HarbisonWalker International, Inc. Vandalia Plant |
| Facility Address: | 1000 Booker Street, Vandalia, MO 63382 |
| Legal Description: | See page 2 |
| UTM Coordinates: | See page 2 |
| Receiving Stream: | See page 2 |
| First Classified Stream and ID: | See page 2 |
| USGS Basin & Sub-watershed No.: | See page 2 |

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

FACILITY DESCRIPTION


See page 2

This permit authorizes only wastewater 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.

December 1, 2019
Effective Date


Edward B. Galbraith, Director, Division of Environmental Quality

March 31, 2024
Expiration Date


Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (CONTINUED)

Harbison-Walker Refractories Company-Vandalia Plant manufactures clay, firebrick, and high alumina refractory products. The main industrial portion of the plant encompasses 45 acres, 13 of which are under roof.

OUTFALL #001 – Intermittent wastewater and stormwater; SIC #3255, #3297

Receives stormwater from the eastern portion of the plant, mixer wash-out water, and brick finishing wastewater. Treatment is two vegetated swales followed by a settling pond. Approximately 100 gallons per day of wastewater is pumped to this outfall; all other flow to this outfall is stormwater. Accumulated mixer wash-out solids are removed to off-site landfill. Discharge from this outfall is not considered continuous. Because the discharge is not continuous, this outfall will contain only daily maximum limits.

| | |
|---------------------------------|--|
| Legal Description: | SE¼, SW¼, Sec.8, T52N, R5W, Audrain County |
| UTM Coordinates: | X = 630188, Y = 4350460 |
| Receiving Stream: | Tributary to Shady Creek |
| First Classified Stream and ID: | 8-20-13 MUDD V.1.0; (C) WBID# 3960 |
| USGS Basin & Sub-watershed No.: | Headwaters Indian Creek (07110008-0201) |
| Design Flow: | 2.5 MGD |
| Average Flow: | 0.063 MGD |

OUTFALL # 002 – Stormwater; SIC #3255, #3297

Receives stormwater from the western portion of the plant. Treatment is a settling pond and vegetated swale.

| | |
|---------------------------------|--|
| Legal Description: | NW¼, SW¼, Sec.8, T52N, R5W, Audrain County |
| UTM Coordinates: | X = 629399, Y = 4350815 |
| Receiving Stream: | Tributary to Spencer Creek |
| First Classified Stream and ID: | 8-20-13 MUDD V.1.0; (C) WBID# 3960 |
| USGS Basin & Sub-watershed No.: | Headwaters Spencer Creek (07110007-0201) |
| Design Flow: | 2.2 MGD |
| Average Flow: | 0.092 MGD |

OUTFALL # 003 – Stormwater; SIC #3255, #3297

Receives stormwater from the southern portion of the plant. Treatment is filtering vegetation.

| | |
|---------------------------------|--|
| Legal Description: | SW¼, SW¼, Sec.8, T52N, R5W, Audrain County |
| UTM Coordinates: | X = 629792, Y = 4350193 |
| Receiving Stream: | Tributary to Shady Creek |
| First Classified Stream and ID: | 8-20-13 MUDD V.1.0; (C) WBID# 3960 |
| USGS Basin & Sub-watershed No.: | Headwaters Indian Creek (07110008-0201) |
| Design Flow: | 1.4 MGD |
| Average Flow: | 0.054 MGD |

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

| OUTFALL #001 Process Wastewater / Industrial Stormwater | 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 December 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: Q | | | | | | |
| PHYSICAL | | | | | | |
| Flow | MGD | * | | - | once/quarter | 24 hr. total |
| Precipitation | inches | * | | - | once/quarter | measured |
| CONVENTIONAL | | | | | | |
| Chemical Oxygen Demand | mg/L | * | | - | once/quarter | grab |
| Oil & Grease | mg/L | 15 | | - | once/quarter | grab |
| pH † | SU | 6.5 to 9.0 | | - | once/quarter | grab |
| Total Suspended Solids | mg/L | 80 | | - | once/quarter | grab |
| METALS | | | | | | |
| Aluminum, Total Recoverable | µg/L | * | | - | once/quarter | grab |
| Chromium (III), Total Recoverable | µg/L | * | | - | once/quarter | grab |
| NUTRIENTS | | | | | | |
| Ammonia, Total as N | mg/L | * | | - | once/quarter | grab |
| Nitrogen, Total N (TN) | mg/L | * | | - | once/quarter | grab |
| Nitrogen, Total Kjeldahl (TKN) | mg/L | * | | - | once/quarter | grab |
| Nitrate plus Nitrite | mg/L | * | | - | once/quarter | grab |
| OTHER | | | | | | |
| Chloride | mg/L | * | | - | once/quarter | grab |
| Sulfate | mg/L | * | | - | once/quarter | grab |
| Chlorides + Sulfate | mg/L | 1000 | | - | once/quarter | grab |
| MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE APRIL 28, 2020 . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |

| OUTFALL #002 Industrial Stormwater | 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 December 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 | | BENCH- MARKS | MONITORING REQUIREMENTS ** | |
| | | DAILY MAXIMUM | MONTHLY AVERAGE | | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| LIMIT SET: Q | | | | | | |
| PHYSICAL | | | | | | |
| Flow | MGD | * | | - | once/quarter ◇ | 24 Hr Est. |
| Precipitation | inches | * | | - | once/quarter ◇ | measured |
| CONVENTIONAL | | | | | | |
| Chemical Oxygen Demand | mg/L | * | | - | once/quarter ◇ | grab |
| Oil & Grease | mg/L | ** | | 10 | once/quarter ◇ | grab |
| pH † | SU | 6.5 to 9.0 | | - | once/quarter ◇ | grab |
| Total Suspended Solids | mg/L | ** | | 80 | once/quarter ◇ | grab |
| METALS | | | | | | |
| Aluminum, Total Recoverable | µg/L | ** | | 1022 | once/quarter ◇ | grab |
| Chromium (III), Total Recoverable | µg/L | * | | - | once/quarter ◇ | grab |
| OTHER | | | | | | |
| Chloride | mg/L | * | | - | once/quarter ◇ | grab |
| Sulfate | mg/L | * | | - | once/quarter ◇ | grab |
| Chloride + Sulfate | mg/L | ** | | 1000 | once/quarter ◇ | grab |
| MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>APRIL 28, 2020</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

| OUTFALL #003 Industrial Stormwater | | TABLE A-3 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 December 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 | | BENCH-MARKS | MONITORING REQUIREMENTS ** | |
| | | DAILY MAXIMUM | MONTHLY AVERAGE | | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| LIMIT SET: Q | | | | | | |
| PHYSICAL | | | | | | |
| Flow | MGD | * | | - | once/quarter ◇ | 24 Hr Est. |
| Precipitation | inches | * | | - | once/quarter ◇ | measured |
| CONVENTIONAL | | | | | | |
| Chemical Oxygen Demand | mg/L | * | | - | once/quarter ◇ | grab |
| Oil & Grease | mg/L | ** | | 10 | once/quarter ◇ | grab |
| pH † | SU | 6.5 to 9.0 | | - | once/quarter ◇ | grab |
| Total Suspended Solids | mg/L | ** | | 80 | once/quarter ◇ | grab |
| METALS | | | | | | |
| Aluminum, Total Recoverable | µg/L | * | | - | once/quarter ◇ | grab |
| OTHER | | | | | | |
| Sulfate | mg/L | * | - | once/quarter ◇ | grab | |
| MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2020. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |

* Monitoring and reporting requirement only

** Monitoring and reporting requirement with benchmark. See Special Conditions for additional requirements.

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

** Precipitation Event Monitoring Requirement: all samples shall be collected from a discharge resulting from a precipitation event greater than 0.1 inches in magnitude and occurring at least 72 hours from the previously measurable precipitation event. If a discharge does not occur within the reporting period, report as no discharge. The total amount of precipitation should be noted from the event from which the samples were collected.

◇ Quarterly sampling

| MINIMUM QUARTERLY SAMPLING REQUIREMENTS | | | |
|--|-----------------------------|--|--------------------------|
| QUARTER | MONTHS | QUARTERLY EFFLUENT PARAMETERS | REPORT IS DUE |
| First | January, February, March | Sample at least once during any month of the quarter | April 28 th |
| Second | April, May, June | Sample at least once during any month of the quarter | July 28 th |
| Third | July, August, September | Sample at least once during any month of the quarter | October 28 th |
| Fourth | October, November, December | Sample at least once during any month of the quarter | January 28 th |

B. STANDARD CONDITIONS

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

C. SPECIAL CONDITIONS

1. Spills, Overflows, and Other Unauthorized Discharges.
 - (a) Any spill, overflow, or other discharge(s) not specifically authorized above are unauthorized discharges.
 - (b) Should an unauthorized discharge cause or permit any contaminants to discharge or enter waters of the state, the unauthorized discharge must be reported to the regional office as soon as practicable but no more than 24 hours after the discovery of the discharge. If the spill or overflow needs to be reported after normal business hours or on the weekend, the facility must call the Department's 24 hour spill line at 573-634-2436.
 - (c) If the unauthorized discharge was from an overflow from a no-discharge wastewater basin, the report must include all records confirming operation and maintenance records documenting proper maintenance in accordance with condition (d) below.
 - (d) Permittee shall adhere to the following minimum Best Management Practices (BMPs) for no-discharge wastewater holding structures:
 - i. To prevent unauthorized discharges, the no-discharge wastewater basin must be properly operated and maintained to contain all wastewater plus run-in and direct precipitation. During normal weather conditions, the liquid level in the storage structure shall be maintained below the upper operating level, so that adequate storage capacity is available for use during adverse weather periods. The liquid level in the storage structure should be lowered on a routine schedule based on the design storage period. Typically this should be accomplished prior to expected seasonal wet and winter climate periods. The upper operating level for uncovered storage structures is one foot below the emergency overflow level. Maintain liquid level in the no-discharge wastewater structure at least 2 feet from the discharge pipe or top of the basin, whichever is lower.
 - ii. Weekly inspection of no-discharge wastewater basins shall occur. Inspection notes will be kept at the facility and made available to the Department upon request.
 - iii. The inspections will note any issues with the no-discharge structure and will record the level of liquid as indicated by the depth marker.
2. Electronic Discharge Monitoring Report (eDMR) Submission System.
 - (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. Standard Conditions Part I, Section B, #7 indicates the eDMR system is currently the only Department approved reporting method for this permit.
 - (b) Programmatic Reporting Requirements. All reports 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. 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
 - (1) Collection System Maintenance Annual Reports;
 - (2) Any additional report required by the permit excluding bypass reporting.
 - (c) 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);
 - (d) Electronic Submission: access the eDMR system via: <https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx>
 - (e) Electronic Reporting Waivers. 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 the approved electronic reporting waiver is effective.
3. Stormwater Pollution Prevention Plan (SWPPP).

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

The SWPPP must include:

 - (a) A listing of specific contaminants and their control measures (or BMPs) and a narrative explaining how BMPs are implemented to control and minimize the amount of contaminants potentially entering stormwater.
 - (b) A map with all outfalls and structural BMPs marked.

C. SPECIAL CONDITIONS (CONTINUED)

- (c) A schedule for at least once per month site inspections and brief written reports. The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.
 - i. Operational deficiencies must be corrected within seven (7) calendar days.
 - ii. Minor structural deficiencies must be corrected within fourteen (14) calendar days.
 - iii. Major structural deficiencies (deficiencies projected to take longer than 14 days to correct) must be reported as an uploaded attachment through the eDMR system with the DMRs. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including proposed timing of the placement of the interim measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. If required by the Department, the permittee shall work with the regional office to determine the best course of action. The permittee should consider temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.
 - iv. All actions taken to correct the deficiencies shall be included with the written report, including photographs, and kept with the SWPPP. Additionally, corrective action of major structural deficiencies shall be reported as an uploaded attachment through the eDMR system with the DMRs.
 - v. BMP failure causing discharge through an unregistered outfall is considered an illicit discharge and must be reported in accordance with Standard Conditions Part I.
 - vi. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to Department personnel upon request. Electronic versions of the documents and photographs are acceptable.
 - (d) A provision for designating an individual to be responsible for environmental matters and a provision for providing training to all 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.
4. Site-wide minimum Best Management Practices (BMPs). At a minimum, the permittee shall adhere to the following:
- (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, warehouse activities, and other areas, and thereby prevent the contamination of stormwater from these substances.
 - (b) Ensure adequate provisions are provided to prevent surface water intrusion into the wastewater storage basin, to divert stormwater runoff around the wastewater storage basin, and to protect embankments from erosion.
 - (c) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
 - (b) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so these materials are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater. Spill records should be retained on-site.
 - (c) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
 - (d) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property.
5. Stormwater Benchmarks. This permit stipulates pollutant benchmarks applicable to your discharge.
- (a) The benchmarks do not constitute direct numeric effluent limitations; therefore, a benchmark exceedance alone is not a permit violation. Benchmark monitoring and visual inspections shall be used to determine the overall effectiveness of the SWPPP and to assist you in knowing when additional corrective action may be necessary to protect water quality. If a sample exceeds a benchmark concentration you must review your SWPPP and your BMPs to determine what improvements or additional controls are needed to reduce the pollutant in your stormwater discharge(s).
 - (b) Any time a benchmark exceedance occurs, a Corrective Action Report (CAR) must be completed. A CAR is a document recording the efforts undertaken by the facility to improve BMPs to meet benchmarks in future samples. CARs must be retained with the SWPPP and be available to the Department upon request. If the efforts taken by the facility are not sufficient and subsequent exceedances of a benchmark occur, the facility must contact the Department if a benchmark value cannot be achieved. Failure to take corrective action to address a benchmark exceedance and failure to make measureable progress towards achieving the benchmarks is a permit violation.
6. Petroleum Secondary Containment.
- Before releasing water accumulated in petroleum secondary containment areas, it must be examined for hydrocarbon odor and presence of sheen to protect the general criteria found at 10 CSR 20-7.031(4).

C. SPECIAL CONDITIONS (CONTINUED)

- (a) If odor or sheen is found, the water shall not be discharged without treatment and shall be disposed of in accordance with legally approved methods, such as being sent to an accepting wastewater treatment facility.
 - (b) If the facility wishes to discharge the accumulated stormwater with hydrocarbon odor or presence of sheen, the water shall be treated using an appropriate removal method. Following treatment and before release, 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 before discharge is authorized. Records of all testing and treatment of water accumulated in secondary containment shall be stored in the SWPPP and be available on demand to the Department.
7. The full implementation of this operating permit, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Clean Water Act Sections 301(b)(2)(C) and (D), §304(b)(2), and §307(a) (2), if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not limited in the permit. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, termination, notice of planned changes, or anticipated non-compliance does not stay any permit condition.
8. Report no discharge when a discharge does not occur during the report period. It is a violation of this permit to report no-discharge when a discharge has occurred.
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).
10. Reporting of Non-Detects.
- (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way the precision and accuracy of the analyzed result can be enumerated.
 - (b) The permittee shall not report a sample result as “non-detect” without also reporting the detection limit of the test or the reporting limit of the laboratory. Reporting as “non-detect” without also including the detection/reporting limit will be considered failure to report, which is a violation of this permit.
 - (c) The permittee shall report the non-detect result using the less than “<” symbol and the laboratory’s detection/reporting limit (e.g. <6).
 - (d) See sufficiently sensitive method requirements in Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
 - (e) When calculating monthly averages, one-half of the minimum detection limit (MDL) should be used instead of a zero. Where all data are below the MDL, the “<MDL” shall be reported as indicated in item (C).
11. Failure to pay fees associated with this permit is a violation of the Missouri Clean Water Law (644.055 RSMo).
12. This permit does not cover land disturbance activities.

C. SPECIAL CONDITIONS (CONTINUED)

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0000710
HARBISONWALKER INTERNATIONAL, INC. VANDALIA PLANT

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollutant 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: Industrial <1 MGD
SIC Code(s): 3255. 3297
NAICS Code(s): 327120
Application Date: 07/23/2018
Expiration Date: 03/31/2019
Last Inspection: 06/04/2015

FACILITY DESCRIPTION:

Harbison Walker International, Inc. Vandalia Plant manufactures clay, firebrick, and specialty refractory products. The main industrial portion of the plant encompasses 45 acres, 13 of which are under roof.

The charter number for the continuing authority for this facility is F00397213; this number was verified by the permit writer to be associated with the facility and precisely matches the continuing authority reported by the facility.

In accordance with 40 CFR 122.21(f)(6), the Department evaluated other permits currently held by this facility. This facility has the following permits: Air Pollution Control Program, Permit Number – 062019-012

PERMITTED FEATURES TABLE:

| OUTFALL | AVERAGE FLOW | DESIGN FLOW | TREATMENT LEVEL | EFFLUENT TYPE |
|---------|--------------|---|-------------------------------------|---|
| #001 | 0.060247 MGD | 100 GPD Industrial Wastewater 0.363000 MGD Industrial Stormwater | Vegetated Swales / Settling Pond | Industrial Wastewater / Industrial Stormwater |
| #002 | 0.092355 MGD | 0.291000 MGD Industrial Stormwater | Vegetated Swale / Settling Pond | Industrial Stormwater |
| #003 | 0.004025 MGD | 0.221000 MGD Industrial Stormwater | Filtering Vegetation | Industrial Stormwater |

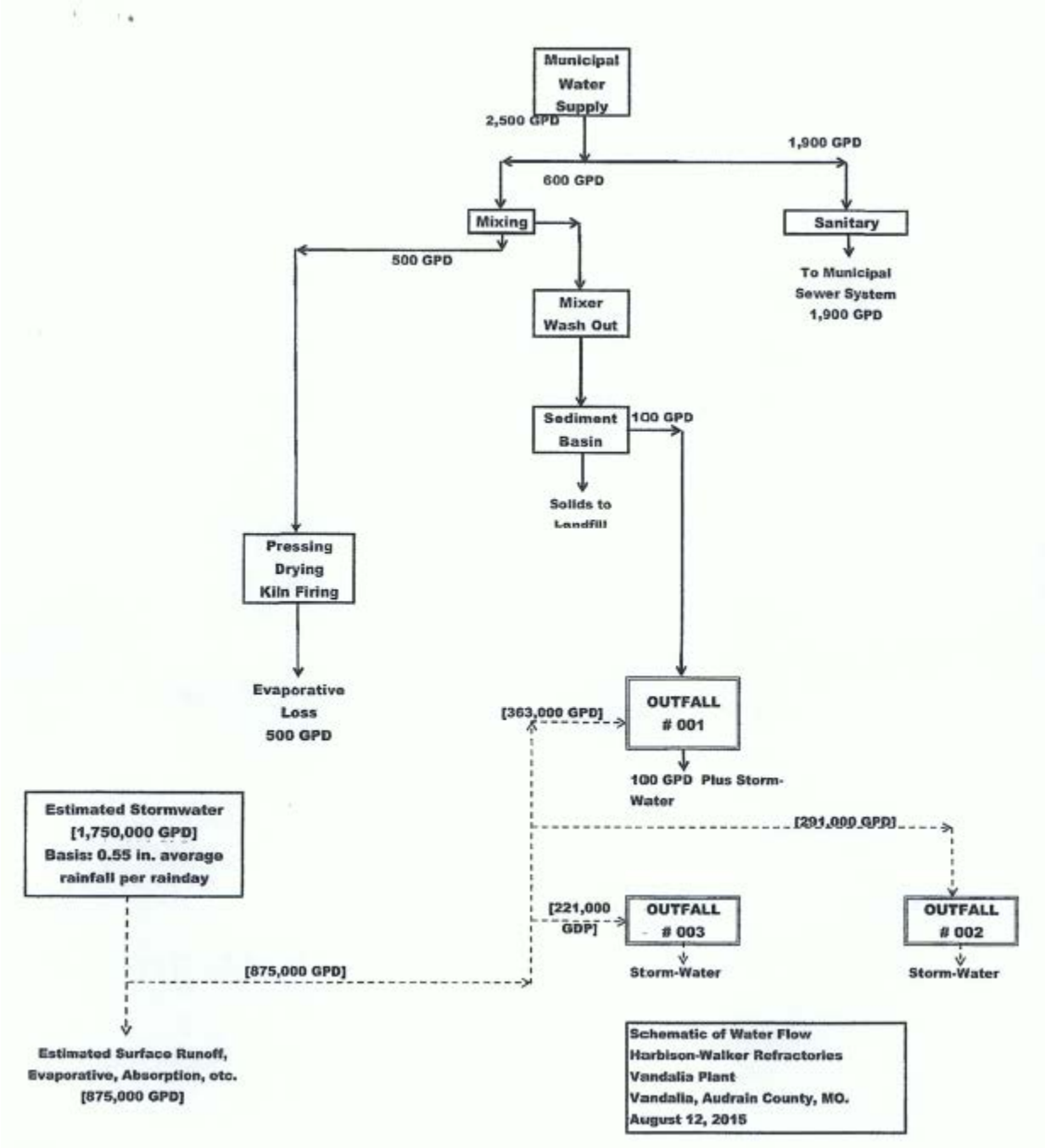
FACILITY PERFORMANCE HISTORY & COMMENTS:

The electronic discharge monitoring reports were reviewed for the last five years. No limits in the permit were exceeded.

FACILITY MAP:



WATER BALANCE DIAGRAM:



PART II. RECEIVING WATERBODY INFORMATION

RECEIVING WATERBODY'S WATER QUALITY:

The receiving waterbody has no concurrent water quality data available.

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>

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

TOTAL MAXIMUM DAILY LOAD (TMDL):

A TMDL is a calculation of the maximum amount of a given pollutant a water body 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 does not discharge to a waterbody/watershed with a TMDL.

UPSTREAM OR DOWNSTREAM IMPAIRMENTS:

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

✓ The permit writer has noted no upstream or downstream impairments near this facility.

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

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

✓ All Other Waters

RECEIVING WATERBODY TABLE:

| OUTFALL | WATERBODY NAME | CLASS | WBID | DESIGNATED USES* | DISTANCE TO SEGMENT (MILES) | 12-DIGIT HUC |
|---------|----------------------------|-------|------|-------------------------------------|-----------------------------|---------------|
| #001 | Tributary to Shady Creek | n/a | n/a | GEN | 0.45 | 07110008-0201 |
| | 8-20-13 MUDD V1.0 | C | 3960 | ALP(WWH), IRR, LWW, SCR, WBC-B, HHP | | |
| #002 | Tributary to Spencer Creek | n/a | n/a | GEN | 0.55 | 07110007-0201 |
| | 8-20-13 MUDD V1.0 | C | 3960 | ALP(WWH), IRR, LWW, SCR, WBC-B, HHP | | |
| #003 | Tributary to Shady Creek | n/a | n/a | GEN | 0.25 | 07110008-0201 |
| | 8-20-13 MUDD V1.0 | C | 3960 | ALP(WWH), IRR, LWW, SCR, WBC-B, HHP | | |

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

RECEIVING WATERBODY MONITORING REQUIREMENTS:

No receiving water monitoring requirements are recommended at this time.

MIXING CONSIDERATIONS:

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

PART III. RATIONALE AND DERIVATION OF PERMIT CONDITIONS

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

- ✓ Not applicable; the facility 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.
 - ✓ 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 (GC) 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. This permit assesses each general criteria as listed in the previous permit's special conditions. 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 while maintaining permit conditions applicable to permittee disclosures and in accordance with 10 CSR 20-7.031(4) where no water contaminant by itself or in combination with other substances shall prevent the water of the state from meeting the following conditions:
 - (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 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 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 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 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 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.
- This facility has numeric effluent limitations for WET testing; specific toxic pollutants are discussed below in Derivation and Discussion of Limits, and where appropriate, numeric effluent limitations added.
 - The permit writer considered specific toxic pollutants when writing this permit. Numeric effluent limitations are included for those pollutants 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.
 - This facility has numeric effluent limitations for WET testing; specific toxic pollutants are discussed below in Derivation and Discussion of Limits, and where appropriate, numeric effluent limitations added.
 - Much like the condition above, the permit writer considered specific toxic pollutants when writing this permit, including those pollutants could cause human health hazards. The discharge is limited by numeric effluent limitations for those conditions could result in human health hazards.
- (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.
 - This facility has numeric effluent limitations for WET testing; specific toxic pollutants are discussed below in Derivation and Discussion of Limits, and where appropriate, numeric effluent limitations added.
 - The permit writer considered specific toxic pollutants when writing this permit. Numeric effluent limitations are included for those pollutants could be discharged in toxic amounts. These effluent limitations are protective of livestock and wildlife watering.
- (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 impairing the natural biological community because nothing disclosed by the permittee indicates this is occurring.
 - It has been established any chemical changes are covered by the specific numeric effluent limitations established in the permit.
 - For all outfalls, there is no RP for hydrologic changes impairing the natural biological community because nothing disclosed by the permittee indicates this is occurring.
- (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 which has reasonable potential to cause or contribute to the materials listed above being discharged through any outfall.
 - There is no reasonable potential for the wastes listed above to be found in the receiving stream at any of the outfalls at this solid waste facility. 10 CSR 80-3.010(16)(A)-(C) require litter and solid wastes be controlled on the site for aesthetic purposes, preventing it from entering the stream. In addition, these regulations require salvaged materials be removed from the landfill daily or stored in aesthetically acceptable containers or enclosures.

ANTIDEGRADATION REVIEW:

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

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

This permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) which must include an alternative analysis (AA) of the BMPs. The SWPPP must be developed, implemented, updated, and maintained at the facility. Failure to implement and maintain the chosen alternative, is a permit violation. The AA is a structured evaluation of BMPs to determine which are reasonable and cost effective. Analysis should include practices designed to be 1) non-degrading, 2) less degrading, or 3) degrading water quality. The chosen BMP will be the most reasonable and cost effective while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The analysis must demonstrate why "no discharge" or "no exposure" are not feasible alternatives at the facility. Existing facilities with established SWPPPs and BMPs need not conduct an additional alternatives analysis unless new BMPs are established to address BMP failures or benchmark exceedances. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.015(9)(A)5 and 7.031(3). For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the AA performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

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

BEST MANAGEMENT PRACTICES:

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

CHANGES IN DISCHARGES OF TOXIC POLLUTANT:

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

COMPLIANCE AND ENFORCEMENT:

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

- ✓ Not applicable; the permittee/facility is not currently under Water Protection Program enforcement action.

DOMESTIC WASTEWATER, SLUDGE, AND BIOSOLIDS:

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

- ✓ Not applicable; this facility discharges domestic wastewater to an off-site permitted wastewater treatment facility (POTW).

Sewage sludge is solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for productive use (i.e. fertilizer) and after having pathogens removed.

Additional information: <http://extension.missouri.edu/main/DisplayCategory.aspx?C=74> (WQ422 through WQ449).

- ✓ Not applicable; the facility does not manage domestic wastewater on-site.

EFFLUENT LIMITATIONS:

Effluent limitations derived and established for this permit are based on current operations of the facility and applied per 10 CSR 20-7.015(9)(A). Any flow through the outfall is considered a discharge and must be sampled and reported as provided in the permit. Future permit action due to facility modification may contain new operating permit terms and conditions which supersede the terms and conditions, including effluent limitations, of this operating permit. Daily maximums and monthly averages are required per 40 CFR 122.45(d)(1) for continuous discharges (not from a POTW).

EFFLUENT LIMITATION GUIDELINE:

Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology based limitations which must be met by the applicable facility at all times.

✓ The facility does not have an associated ELG.

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:

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

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

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

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

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

GENERAL CRITERIA CONSIDERATIONS:

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants determined to cause, have reasonable potential to cause, or to contribute to, an excursion above any water quality standard, including narrative water quality criteria. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether discharges have reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). In instances where reasonable potential exists, the permit includes limitations within the permit to address the reasonable potential. In discharges where reasonable potential does not exist, the permit may include monitoring to later determine the discharge's potential to impact the narrative criteria. Additionally, §644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state it shall be unlawful for any person to cause or allow any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule, or regulation promulgated by the commission.

✓ Applicable; this permit contains effluent limitations to protect for toxicity in accordance with 10 CSR 20-7.031(4)(D) and (G); see Part IV for specific pollutant discussion.

GROUNDWATER MONITORING:

Groundwater is a water of the state according to 10 CSR 20-2.010(82), and is subject to regulations at 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.

✓ This facility 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 Statutes Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). <https://dnr.mo.gov/pubs/pub2236.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 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.

OIL/WATER SEPARATORS:

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

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

REASONABLE POTENTIAL (RP):

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

- ✓ Not applicable; a mathematical RPA was not conducted for this facility. This permit establishes permit limits and benchmarks for stormwater. The Department has determined stormwater is not a continuous discharge and is therefore not necessarily dependent on mathematical RPAs. However, the permit writer completed an RPD, a reasonable potential determination, using best professional judgment for all of the appropriate parameters in this permit. An RPD consists of reviewing application data and/or discharge monitoring data for the last five years and comparing those data to narrative or numeric water quality criteria.

SAMPLING FREQUENCY JUSTIFICATION:

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

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

SAMPLING TYPE JUSTIFICATION:

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

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. SOC's are allowed under 40 CFR 122.47 providing certain conditions are met. A SOC is not allowed:

- For effluent limitations based on technology-based standards established in accordance with federal requirements, if the deadline for compliance established in federal regulations has passed. 40 CFR § 125.3.
- For a newly constructed facility in most cases. Newly constructed facilities must meet applicable effluent limitations when discharge begins, because the facility has installed the appropriate control technology as specified in a permit or antidegradation review. A SOC is allowed for a new water quality based effluent limit not included in a previously public noticed permit or antidegradation review, which may occur if a regulation changes during construction.

- To develop a TMDL, UAA, or other study associated with development of a site specific criterion. A facility is not prohibited from conducting these activities, but a SOC may not be granted for conducting these activities.

In order to provide guidance in developing SOC's, and to attain a greater level of consistency, the Department issued a policy on development of SOC's on October 25, 2012. The policy provides guidance to permit writers on standard time frames for schedules for common activities, and guidance on factors to modify the length of the schedule.

- ✓ Not applicable; this permit does not contain a SOC. Limits have not become more restrictive. No SOC is allowed because the permittee is already capable of meeting the new effluent limits.

SPILLS, OVERFLOWS, AND OTHER UNAUTHORIZED DISCHARGE REPORTING:

Per 260.505 RSMo, any emergency involving a hazardous substance must be reported to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The Department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply whether or not the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. <http://dnr.mo.gov/env/esp/spillbill.htm>

Any other spills, overflows, or unauthorized discharges reaching waters of the state must be reported to the regional office during normal business hours, or after normal business hours, to the Department's 24 hour Environmental Emergency Response spill line at 573-634-2436.

SLUDGE – INDUSTRIAL:

Industrial sludge is solid, semi-solid, or liquid residue generated during the treatment of industrial process or non-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 any material derived from industrial sludge.

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

STANDARD CONDITIONS:

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

STORMWATER PERMITTING: LIMITATIONS AND BENCHMARKS:

Because of the fleeting nature of stormwater discharges, the Department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) Section 3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater-only outfalls will generally only contain a maximum daily limit (MDL), benchmark, or monitoring requirement as dictated by site specific conditions, the BMPs in place, past performance of the facility, and the receiving water's current quality.

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 Water Quality Standards (WQSs) are based on one hour of exposure, and must be protected at all times. Therefore, industrial stormwater facilities with toxic contaminants present in the stormwater may have the potential to cause a violation of acute WQSs if toxic contaminants occur in sufficient amounts. In this instance, the permit writer may apply daily maximum limitations.

Conversely, it is unlikely for rainfall to cause a discharge for four continuous days from a facility; if this does occur however, the receiving stream will also likely sustain a significant amount of flow providing dilution. Most chronic WQSs are based on a four-day exposure with some exceptions. Under this scenario, most industrial stormwater facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

A standard mass-balance equation cannot be calculated for stormwater because stormwater flow and flow in the receiving stream cannot be determined for conditions on any given day or storm event. The amount of stormwater discharged from the facility will vary based on current and 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, area of surfaces with reduced permeability (houses, parking lots, and the like) in the watershed, hydrogeology, topography, etc. Decreased permeability may increase the stream flow dramatically over a short period of time (flash).

Numeric benchmark values are based on site specific requirements taking in to account a number of factors but cannot be applied to any process water discharges. First, the technology in place at the site to control pollutant discharges in stormwater is evaluated. The permit writer also evaluates other similar permits for similar activities. A review of the guidance forming the basis of Environmental Protection Agency's (EPA's) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP) may also occur. 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 may also be used. 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. If a facility has not disclosed BMPs applicable to the pollutants for the site, the permittee may not be eligible for benchmarks.

40 CFR 122.44(b)(1) requires the permit implement the most stringent limitations for each discharge, including industrially exposed stormwater; and 40 CFR 122.44(d)(1)(i) and (iii) requires the permit to include water-quality based effluent limitations where reasonable potential has been found. However, because of the non-continuous nature of stormwater discharges, staff are unable to perform statistical Reasonable Potential Analysis (RPA) under most stormwater discharge scenarios. Reasonable potential determinations (RPDs; see REASONABLE POTENTIAL above) using best professional judgment are performed.

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 conditions of the permit.

BMP inspections typically occur more frequently than sampling. Sampling frequencies are based on the facility's ability to comply with the benchmarks and the requirements of the permit. Inspections should occur after large rain events and any other time an issue is noted; sampling after a benchmark exceedance may need to occur to show the corrective action taken was meaningful.

When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer, if there is no RP for water quality excursions.

✓ Applicable, this facility has stormwater-only outfalls where benchmarks or limitations were deemed appropriate contaminant measures.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

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

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

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed the facility will employ the control measures determined to be adequate to achieve the benchmark values discussed above. The facility will conduct monitoring and inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example, if sample results from an outfall show values of TSS above the benchmark value, the BMP being employed is deficient in controlling stormwater pollution. Corrective action should be taken to repair, improve, or replace the failing BMP. This internal evaluation is required at least once per month but should be continued more frequently if BMPs continue to fail. If failures do occur, continue this trial and error process until appropriate BMPs have been established.

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

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

If parameter-specific numeric benchmark exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the permittee can submit a request to re-evaluate the benchmark values. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values; 2) financial data of the company and documentation of cost associated with BMPs for review and 3) the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. This will allow the Department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request shall be submitted in the form of an operating permit modification, which includes an appropriate fee; the application is found at: <https://dnr.mo.gov/forms/#WaterPollution>

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

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:

Please review Standard Conditions Part 1, section A, number 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 and/or 40 CFR 136 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is “sufficiently sensitive” when; 1) the method quantifies the pollutant below the level of the applicable water quality criterion or; 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility’s discharge is high enough the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015 and or 40 CFR 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established. A permittee is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive. 40 CFR 136 lists the approved methods accepted by the Department. Tables A1-B3 at 10 CSR 20-7.031 shows water quality standards.

UNDERGROUND INJECTION CONTROL (UIC):

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

✓ Not applicable; the permittee has not submitted materials indicating the facility will be performing UIC at this site.

VARIANCE:

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

- ✓ Not applicable; this permit is not drafted under premise of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the WLA is the amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does not provide adequate protection for the receiving water, then the other must be used per 10 CSR 20-7.015(9)(A). Total Maximum Daily Loads, if required for this facility, were also reviewed.

- ✓ Applicable; wasteload allocations for toxic parameters were calculated using water quality criteria or water quality model results and by applying the dilution equation below; WLAs are calculated using the *Technical Support Document For Water Quality-Based Toxics Control* or TSD EPA/505/2-90-001; 3/1991.

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

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

- ✓ Acute wasteload allocations designated as daily maximum limits (MDL) were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).
- ✓ Chronic wasteload allocations designated as monthly average limits (AML) were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ).
- ✓ Number of Samples “n”: effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying assumption which should be, at a minimum, targeted to comply with the values dictated by the WLA. Therefore, it is recommended the actual planned frequency of monitoring be used to determine the value of “n” for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for “n” must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is “n = 4”. For total ammonia as nitrogen, “n = 30” is used.

WASTELOAD ALLOCATION (WLA) MODELING:

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

- ✓ Applicable; a dissolved metal translator study was submitted to the department by Harbison Walker International, Inc. for outfalls #001 and #002. The study was conducted per an approved QAPP, “Plan of Study and Quality Assurance Project Plan – Dissolved Metal Translators – Aluminum 2013”. A site specific dissolved metal translator (DMT) was determined for aluminum at outfalls #001 and #002.

Eleven data points were used to determine the geometric mean of the dissolved fraction of aluminum in the outfall samples. The DMT was then applied to the dissolved aluminum acute water quality criterion (750 µg/L) to calculate a total recoverable water quality objective for each outfall. The total recoverable water quality objective was then applied as the daily maximum effluent limit, with a 10% margin of safety.

| | Outfall 001 | Outfall 002 |
|---|-------------|-------------|
| DMT (geometric mean of dissolved fractions) | 0.045 | 0.022 |
| Aluminum Water Quality Criterion, Dissolved, Acute | 0.750 mg/L | 0.750 mg/L |
| Total Recoverable Aluminum Water Quality Objective | 16.6 mg/L | 33.6 mg/L |
| Daily Maximum Effluent Limit (10% margin of safety) | 14.9 mg/L | 30.2 mg/L |

PART IV. EFFLUENT LIMITS DETERMINATIONS

OUTFALL #001 – PROCESS WASTEWATER / INDUSTRIAL STORMWATER

EFFLUENT LIMITATIONS TABLE:

| PARAMETERS | UNIT | DAILY MAX | MONTHLY AVG. | PREVIOUS PERMIT LIMITS | MINIMUM SAMPLING FREQUENCY | REPORTING FREQUENCY | SAMPLE TYPE |
|--------------------------------|--------|--------------|-----------------|------------------------------|----------------------------------|------------------------|--------------|
| PHYSICAL | | | | | | | |
| FLOW | MGD | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | 24 HR. TOTAL |
| PRECIPITATION | inches | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | 24 HR. TOTAL |
| CONVENTIONAL | | | | | | | |
| COD | mg/L | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| OIL & GREASE | mg/L | 15 | 10 | 15/- | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| pH † | SU | 6.5 TO 9.0 | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| TOTAL SUSPENDED SOLIDS (TSS) | mg/L | 80 | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| METALS | | | | | | | |
| ALUMINUM, TR | µg/L | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| CHROMIUM (III), TR | µg/L | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| NUTRIENTS | | | | | | | |
| AMMONIA AS N | mg/L | * | - | NEW | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| NITROGEN, TOTAL AS N (TN) | mg/L | * | - | NEW | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| NITROGEN, TOTAL KJELDAHL (TKN) | mg/L | * | - | NEW | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| NITRATE PLUS NITRITE | mg/L | * | - | NEW | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| OTHER | | | | | | | |
| CHLORIDE | mg/L | * | - | NEW | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| SULFATE | mg/L | * | - | NEW | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| CHLORIDE PLUS SULFATE | mg/L | 1000 | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |

* monitoring and reporting requirement only

† report the minimum and maximum pH values; pH is not to be averaged

TR total recoverable

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification. The facility will report the total flow in millions of gallons per day (MGD), quarterly monitoring continued from previous permit.

Precipitation

Monitoring only requirement; measuring the amount of precipitation [(10 CSR 20-6.200(2)(C)1.E(VI)] during an event is necessary to ensure adequate stormwater management exists at the site. Knowing the amount of potential stormwater runoff can provide the permittee a better understanding of any specific control measures that should be employed to ensure protection of water quality. The facility will provide the 24 hour accumulation value of precipitation from the day of sampling the other parameters.

CONVENTIONAL:

Chemical Oxygen Demand (COD)

Monitoring continued from previous permit. Permittee reported a value of 52 mg/L at outfall #001 on the application materials received 07/23/2008. This indicates COD may be a pollutant of concern at this site. There is no numeric water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the permittee to identify increases in COD that may indicate materials/chemicals coming into contact with stormwater causing an increase in oxygen demand. Increases in COD may indicate a need for maintenance or improvement of BMPs. The benchmark value falls within the range of values implemented in other permits having similar industrial activities and is achievable through proper BMP controls.

Oil & Grease

Daily maximum limit of 15 mg/L continued from previous permit. DMR data shows values ranging from 5 mg/L to 6 mg/L. There have not been any exceedances of the daily maximum limit. Oil and grease is considered a conventional pollutant. Oil and grease is a comprehensive test which measures for gasoline, diesel, crude oil, creosote, kerosene, heating oils, heavy fuel oils, lubricating oils, waxes, and some asphalt and pitch. The test can also detect some volatile organics such as benzene, toluene, ethylbenzene, or toluene, but these constituents are often lost during testing due to their boiling points. Oils and greases of different densities will possibly form sheen or unsightly bottom deposits at levels which vary from 10 mg/L. To protect the general criteria, it is the responsibility of the permittee to visually observe the discharge and receiving waters for sheen or bottom deposits.

AQL Chronic: 10 mg/L per 10 CSR 20-7.031 Table A1

Set chronic standard equal to chronic WLA per TSD §5.4.2 (EPA/505/2-90-001); multiply by 1.5 to obtain acute limit.

10 mg/L * 1.5 = 15 mg/L

pH

6.5 to 9.0 SU – instantaneous grab sample. Water quality limits [10 CSR 20-7.031(5)(E)] are applicable to this outfall.

Total Suspended Solids (TSS)

Daily maximum limit of 80 mg/L continued from previous permit. DMR data shows no exceedance for this parameter. TSS is a common indicator pollutant in stormwater. Discharge at this outfall comes from both stormwater and process water. Because process water is a component of this discharge, the permit writer uses best professional judgement to continue limits on this parameter. There is no water quality standard for TSS; however, sediment discharges can negatively impact aquatic life habitat. TSS is also a valuable indicator parameter. TSS monitoring allows the permittee to identify increases in TSS that may indicate uncontrolled materials leaving the site. Increased suspended solids in runoff can lead to decreased available oxygen for aquatic life and increase of surface water temperatures in a receiving stream. Suspended solids can also be carriers of toxins, which can adsorb to the suspended particles; therefore, total suspended solids are a valuable indicator parameter for other pollution.

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). Propagation of fish, shellfish, and wildlife apply designated as “Aquatic Life Protection” in 10 CSR 20-7.031 Tables A1 and A2. Additional use criterion (HHP, DWS, GRW, IRR, or LWW) may also be used as applicable to determine the most protective effluent limit for the waterbody class and uses.

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). Concurrent site-specific data for total recoverable aluminum and dissolved aluminum was provided to the department for outfalls #001 and #002 at this facility. The department has integrated those findings into derivation of the water quality limits.

| | Outfall 001 | Outfall 002 |
|---|-------------|-------------|
| DMT (geometric mean of dissolved fractions) | 0.045 | 0.022 |
| Aluminum Water Quality Criterion, Dissolved, Acute | 0.750 mg/L | 0.750 mg/L |
| Total Recoverable Aluminum Water Quality Objective | 16.6 mg/L | 33.6 mg/L |
| Daily Maximum Effluent Limit (10% margin of safety) | 14.9 mg/L | 30.2 mg/L |

Aluminum, Total Recoverable

Monitoring only continued from previous permit. DMR data shows that there have been no exceedance during the previous permit cycle. A dissolved metal translator study was submitted to the department by Harbison-Walker for outfalls #001 & #002. The study was conducted per and approved QAPP, "Plan of study and Quality Assurance Project Plan – Dissolved Metal Translators – Aluminum, August 2013". A site specific dissolved metal translator (DMT) was determined for aluminum at outfalls #001 & #002.

Eleven data points were used to determine the geometric mean of the dissolved fraction of aluminum in the outfall samples. The DMT was then applied to the dissolved aluminum acute water quality criterion (750 µg/L) to calculate a total recoverable water quality objective for each outfall. The total recoverable water quality objective was then applied as the daily maximum effluent limit, with a 10% margin of safety.

Outfall 001:

Daily Maximum Limit, mg/L = 0.750 mg/L / Outfall 001 DMT * 0.9

Where,

0.750 mg/L = dissolved acute aquatic life criterion for aluminum

DMT = geometric mean of Outfall 001 dissolved fractions (dissolved result / total result)

0.9 = 10% safety factor as requested by MODNR

Daily Maximum Limit, mg/L = (0.750 mg/L / 0.045) * 0.9 = 14.9 mg/L

The daily maximum limit for water quality at this outfall would be 14.9 mg/L. DMRs show that discharges from this outfall ranged from .0018 mg/L to .857 mg/L. These numbers are well below the water quality limits, demonstrating no reasonable potential for exceedances. Because there is no reasonable potential, a limit is not required for this parameter.

Chromium (III), Total Recoverable

Monitoring only, continued from previous permit. Application materials received 7/23/2018 indicated this pollutant is "believed present", and is part of the industrial process ingredients, therefore monitoring is continued.

NUTRIENTS:

Ammonia

Nitrogen is expected to be present in the discharge therefore quarterly monitoring of ammonia is required per 10 CSR-20-7.015(9)(D)8.

Nitrogen, Total N (TN)

Nitrogen is expected to be present in this outfall's discharge therefore the permit writer is requesting the facility also supply the total nitrogen in the discharge at the same frequency as the other nutrient parameters.

Nitrogen, Total Kjeldahl (TKN)

Nitrogen is expected to be present in this outfall's discharge therefore quarterly monitoring is required per 10 CSR 20-7.015(9)(D)8.

Nitrate plus Nitrite

Nitrogen is expected to be present in this outfall's discharge therefore monitoring is required per 10 CSR 20-7.015(9)(D)8.

OTHER:

Chloride

Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of chloride.

Sulfate

Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of sulfate.

Chloride Plus Sulfate

Benchmark of 1000 mg/L, continued from previous permit. There were no exceedances of this value during the previous permit cycle. The benchmark is based on water quality standards found in 10 CSR 20-7.031.

OUTFALL #002 – INDUSTRIAL STORMWATER

EFFLUENT LIMITATIONS TABLE:

| PARAMETERS | UNIT | DAILY MAX | BENCH-MARKS | PREVIOUS PERMIT LIMITS | MINIMUM SAMPLING FREQUENCY | REPORTING FREQUENCY | SAMPLE TYPE |
|------------------------------|--------|------------|-------------|------------------------|----------------------------|---------------------|--------------|
| PHYSICAL | | | | | | | |
| FLOW | MGD | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | 24 HR. TOTAL |
| PRECIPITATION | inches | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | 24 HR. TOTAL |
| CONVENTIONAL | | | | | | | |
| COD | mg/L | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| OIL & GREASE | mg/L | ** | 10 | 15/- | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| pH † | SU | 6.5 TO 9.0 | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| TOTAL SUSPENDED SOLIDS (TSS) | mg/L | ** | 80 | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| METALS | | | | | | | |
| ALUMINUM, TR | µg/L | ** | 1022 | 1328 | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| CHROMIUM (III), TR | µg/L | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| OTHER | | | | | | | |
| CHLORIDE | mg/L | * | - | NEW | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| SULFATE | mg/L | * | - | NEW | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| CHLORIDE PLUS SULFATE | mg/L | ** | 1000 | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |

* monitoring and reporting requirement only

† report the minimum and maximum pH values; pH is not to be averaged

TR total recoverable

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification. The facility will report the total flow in millions of gallons per day (MGD), quarterly monitoring continued from previous permit.

Precipitation

Monitoring only requirement; measuring the amount of precipitation [(10 CSR 20-6.200(2)(C)1.E(VI)] during an event is necessary to ensure adequate stormwater management exists at the site. Knowing the amount of potential stormwater runoff can provide the permittee a better understanding of any specific control measures be employed to ensure protection of water quality. The facility will provide the 24 hour accumulation value of precipitation from the day of sampling the other parameters.

CONVENTIONAL:

Chemical Oxygen Demand (COD)

Monitoring continued from previous permit. DMRs show values ranging from 25 mg/L to 33 mg/L. The permittee did not sample for COD on the application materials submitted 07/23/2019. Samples done for outfall #001 indicate this may be a pollutant of concern in stormwater at this facility. There is no numeric water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the permittee to identify increases in COD that may indicate materials/chemicals coming into contact with stormwater causing an increase in oxygen demand. Increases in COD may indicate a need for maintenance or improvement of BMPs.

Oil & Grease

Monitoring with a daily maximum benchmark of 10 mg/L. DMRs showed data ranging from 0.2 mg/L to 6 mg/L for this parameter. Oil and grease is considered a conventional pollutant. Oil and grease is a comprehensive test which measures for gasoline, diesel, crude oil, creosote, kerosene, heating oils, heavy fuel oils, lubricating oils, waxes, and some asphalt and pitch. The test can also detect some volatile organics such as benzene, toluene, ethylbenzene, or toluene, but these constituents are often lost during testing due to their boiling points. It is recommended to perform separate testing for these constituents if they are a known pollutant of concern at the site, i.e. aquatic life toxicity or human health is a concern. Results do not allow for separation of specific pollutants within the test, they are reported, totaled, as “oil and grease”. Per 10 CSR 20-7.031 Table A1: *Criteria for Designated Uses*; 10 mg/L is the standard for protection of aquatic life. This standard will also be used to protect the general criteria found at 10 CSR 20-7.031(4). 10 mg/L is the level at which sheen is expected to form on receiving waters. Oils and greases of different densities will possibly form sheen or unsightly bottom deposits at levels which vary from 10 mg/L. To protect the general criteria, it is the responsibility of the permittee to visually observe the discharge and receiving waters for sheen or bottom deposits. The benchmark is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities.

pH

6.5 to 9.0 SU – instantaneous grab sample. Water quality limits [10 CSR 20-7.031(5)(E)] are applicable to this outfall.

Total Suspended Solids (TSS)

Monitoring continued from the previous permit, with a daily maximum benchmark of 80 mg/L. DMRs show data ranging from 5 mg/L to 25 mg/L. There is no numeric water quality standard for TSS; however, sediment discharges can negatively impact aquatic life habitat. TSS is also a valuable indicator parameter. TSS monitoring allows the permittee to identify increases in TSS indicating uncontrolled materials leaving the site. Increased suspended solids in runoff can lead to decreased available oxygen for aquatic life and an increase of surface water temperatures in a receiving stream. Suspended solids can also be carriers of toxins, which can adsorb to the suspended particles; therefore, total suspended solids are a valuable indicator parameter for other pollution. The benchmark is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities.

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). Propagation of fish, shellfish, and wildlife apply designated as “Aquatic Life Protection” in 10 CSR 20-7.031 Tables A1 and A2. Additional use criterion (HHP, DWS, GRW, IRR, or LWV) may also be used as applicable to determine the most protective effluent limit for the waterbody class and uses.

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). Concurrent site-specific data for total recoverable aluminum and dissolved aluminum was provided to the department for outfalls #001 and #002 at this facility. The department has integrated those findings into derivation of the water quality limits.

| | Outfall 001 | Outfall 002 |
|---|-------------|-------------|
| DMT (geometric mean of dissolved fractions) | 0.045 | 0.022 |
| Aluminum Water Quality Criterion, Dissolved, Acute | 0.750 mg/L | 0.750 mg/L |
| Total Recoverable Aluminum Water Quality Objective | 16.6 mg/L | 33.6 mg/L |
| Daily Maximum Effluent Limit (10% margin of safety) | 14.9 mg/L | 30.2 mg/L |

Aluminum, Total Recoverable

Monitoring only continued from previous permit. DMR data shows that there have been no exceedance during the previous permit cycle. A dissolved metal translator study was submitted to the department by Harbison-Walker for outfalls #001 & #002. The study was conducted per and approved QAPP, “Plan of study and Quality Assurance Project Plan – Dissolved Metal Translators – Aluminum, August 2013”. A site specific dissolved metal translator (DMT) was determined for aluminum at outfalls #001 & #002.

Eleven data points were used to determine the geometric mean of the dissolved fraction of aluminum in the outfall samples. The DMT was then applied to the dissolved aluminum acute water quality criterion (750 µg/L) to calculate a total recoverable water quality objective for each outfall. The total recoverable water quality objective was then applied as the daily maximum effluent limit, with a 10% margin of safety.

Outfall 002:

Daily Maximum Limit, mg/L = 0.750 mg/L / Outfall 001 DMT * 0.9

Where,

0.750 mg/L = dissolved acute aquatic life criterion for aluminum

DMT = geometric mean of Outfall 002 dissolved fractions (dissolved result / total result)

0.9 = 10% safety factor as requested by MODNR

Daily Maximum Limit, mg/L = (0.750 mg/L / 0.022) * 0.9 = 30.2 mg/L

The daily maximum limit for water quality at this outfall would be 30.2 mg/L. The discharges from this outfall ranged from 0.128 mg/L to 1.04 mg/L. These numbers are well below the water quality standards, demonstrating no reasonable potential for exceedances. Because there is no reasonable potential, a limit is not required for this parameter; therefore, the limit is removed.

A benchmark is placed on this parameter, as the discharge from this outfall is largely stormwater, and technology based benchmarks are appropriate for stormwater discharges. The benchmark for this parameter is believed to be technologically feasible for this facility using currently installed BMP measures. The data for aluminum discharges from 06/30/2015 thru 06/30/2019 was used to find the 99th percentile value, meaning the value is achievable 99% of the time at this outfall. This value is 1.022 mg/L or 1022 µg/L.

Data set used to determine outfall #002 aluminum benchmark (mg/L)

| Date | Daily max (mg/L) | Date | Daily max (mg/L) |
|------------|------------------|--------------|------------------|
| 06/30/2019 | 0.307 | 03/31/2017 | 1.04 |
| 03/31/2019 | 0.348 | 12/31/2016 | ND |
| 12/31/2018 | 0.194 | 09/30/2016 | 0.128 |
| 09/30/2018 | ND | 06/30/2016 | 0.245 |
| 06/30/2018 | 0.535 | 03/31/2016 | 0.893 |
| 03/31/2018 | 0.494 | 12/31/2015 | 0.616 |
| 12/31/2017 | ND | 09/30/2015 | 0.16 |
| 09/30/2017 | ND | 06/30/2015 | 0.579 |
| 6/30/2017 | 0.759 | 99% = | 1.0223 |

Chromium (III), Total Recoverable

Monitoring only, continued from previous permit. The permittee indicated this pollutant as “believed present” on application materials received 07/23/2018, and identified the pollutant as an ingredient in their industrial process; therefore, monitoring is continued.

OTHER:

Chloride

Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of chloride.

Sulfate

Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of sulfate.

Chloride Plus Sulfate

Benchmark of 1000 mg/L. There were no exceedances of this value during the previous permit cycle. The benchmark is based on water quality standards found in 10 CSR 20-7.031.

OUTFALL #003 – INDUSTRIAL STORMWATER

EFFLUENT LIMITATIONS TABLE:

| PARAMETERS | UNIT | DAILY MAX | MONTHLY AVG. | PREVIOUS PERMIT LIMITS | MINIMUM SAMPLING FREQUENCY | REPORTING FREQUENCY | SAMPLE TYPE |
|------------------------------|--------|--------------|-----------------|------------------------------|----------------------------------|------------------------|--------------|
| PHYSICAL | | | | | | | |
| FLOW | MGD | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | 24 HR. TOTAL |
| PRECIPITATION | inches | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | 24 HR. TOTAL |
| CONVENTIONAL | | | | | | | |
| COD | mg/L | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| OIL & GREASE | mg/L | ** | 10 | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| pH † | SU | 6.5 TO 9.0 | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| TOTAL SUSPENDED SOLIDS (TSS) | mg/L | ** | 80 | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| METALS | | | | | | | |
| ALUMINUM, TR | µg/L | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| OTHER | | | | | | | |
| SULFATE | mg/L | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |

* monitoring and reporting requirement only

† report the minimum and maximum pH values; pH is not to be averaged

TR total recoverable

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification. The facility will report the total flow in millions of gallons per day (MGD), quarterly monitoring continued from previous permit.

Precipitation

Monitoring only requirement; measuring the amount of precipitation [(10 CSR 20-6.200(2)(C)1.E(VI)] during an event is necessary to ensure adequate stormwater management exists at the site. Knowing the amount of potential stormwater runoff can provide the permittee a better understanding of any specific control measures be employed to ensure protection of water quality. The facility will provide the 24 hour accumulation value of precipitation from the day of sampling the other parameters.

CONVENTIONAL:

Chemical Oxygen Demand (COD)

Monitoring continued from previous permit. DMRs show values ranging from 36 mg/L to 76 mg/L. The permittee did not sample for COD on the application materials submitted 07/23/2019. Samples done for outfall #001 indicate this may be a pollutant of concern in stormwater at this facility. There is no numeric water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the permittee to identify increases in COD that may indicate materials/chemicals coming into contact with stormwater causing an increase in oxygen demand. Increases in COD may indicate a need for maintenance or improvement of BMPs.

Oil & Grease

Monitoring with a daily maximum benchmark of 10 mg/L. DMRs showed consistent data of 5 mg/L for this parameter. Oil and grease is considered a conventional pollutant. Oil and grease is a comprehensive test which measures for gasoline, diesel, crude oil, creosote, kerosene, heating oils, heavy fuel oils, lubricating oils, waxes, and some asphalt and pitch. The test can also detect some volatile organics such as benzene, toluene, ethylbenzene, or toluene, but these constituents are often lost during testing due to their boiling points. It is recommended to perform separate testing for these constituents if they are a known pollutant of concern at the site, i.e. aquatic life toxicity or human health is a concern. Results do not allow for separation of specific pollutants within the test, they are reported, totaled, as “oil and grease”. Per 10 CSR 20-7.031 Table A1: *Criteria for Designated Uses*; 10 mg/L is the standard for protection of aquatic life. This standard will also be used to protect the general criteria found at 10 CSR

20-7.031(4). 10 mg/L is the level at which sheen is expected to form on receiving waters. Oils and greases of different densities will possibly form sheen or unsightly bottom deposits at levels which vary from 10 mg/L. To protect the general criteria, it is the responsibility of the permittee to visually observe the discharge and receiving waters for sheen or bottom deposits. The benchmark is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities.

pH

6.5 to 9.0 SU – instantaneous grab sample. Water quality limits [10 CSR 20-7.031(5)(E)] are applicable to this outfall.

Total Suspended Solids (TSS)

Monitoring continued from the previous permit, with a daily maximum benchmark of 80 mg/L. DMRs showed consistent data of 5 mg/L (the detection limit). There is no numeric water quality standard for TSS; however, sediment discharges can negatively impact aquatic life habitat. TSS is also a valuable indicator parameter. TSS monitoring allows the permittee to identify increases in TSS indicating uncontrolled materials leaving the site. Increased suspended solids in runoff can lead to decreased available oxygen for aquatic life and an increase of surface water temperatures in a receiving stream. Suspended solids can also be carriers of toxins, which can adsorb to the suspended particles; therefore, total suspended solids are a valuable indicator parameter for other pollution. The benchmark is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities.

METALS:

Aluminum, Total Recoverable

Monitoring only, continued from previous permit. Application materials received 07/23/2019 indicate the facility manufactures clay and high alumina refractory products and lists aluminum as a pollutant of concern, due to the use of raw alumina materials.

OTHER:

Sulfate

Monitoring only, continued from previous permit. The DMR data shows values ranging from 20.2 mg/L to 116 mg/L. Application materials received 07/23/2019 list sulfate as a pollutant of concern in section 3.0 “Intake and Effluent Characteristics, therefore monitoring is continued at this site.

PART V. ADMINISTRATIVE REQUIREMENTS

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

PERMIT SYNCHRONIZATION:

The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is all permits within a watershed will move through the Watershed Based Management (WBM) cycle together and all expire in the same fiscal year. <http://dnr.mo.gov/env/wpp/cpp/docs/watershed-based-management.pdf>. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than two years old, such data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

✓ This permit will become synchronized by expiring the end of the 1st quarter, 2024.

PUBLIC NOTICE:

The Department shall give public notice a draft permit has been prepared and its issuance is pending.

<http://dnr.mo.gov/env/wpp/permits/pn/index.html> Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in or with water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

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

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

✓ The Public Notice period for this operating permit was from October 04, 2019 to November 04, 2019. No responses were received.

DATE OF FACT SHEET: 08/06/2019

COMPLETED BY:

KYLE O'ROURKE, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
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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.



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- 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.
- 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 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.

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



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REVISED
AUGUST 1, 2014

- 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 permittee 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.



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

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.

RECEIVED

JUL 23 2018

20294

Water Protection Program

FOR AGENCY USE ONLY



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
**FORM A – APPLICATION FOR NONDOMESTIC PERMIT
UNDER MISSOURI CLEAN WATER LAW**

CHECK NUMBER

DATE RECEIVED

FEE SUBMITTED

7-23-18

NOTE: PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for: (Select only one.)

- ☐ An operating permit for a new or unpermitted facility. Number of original construction permit: MO _____
- ☒ Renewal of an operating permit. Permit number: MO 0000710 Expiration date: March 31, 2019
- ☐ Modification of an operating permit. Permit number: MO _____ Modification reason: _____

1.1 Is the appropriate fee included with the application? (See instructions for appropriate fee.) ☐ Yes ☒ No

2. FACILITY

| | | | |
|---|---------------------------------|-------|----------|
| NAME | TELEPHONE NUMBER WITH AREA CODE | | |
| HarbisonWalker International, Inc. Vandalia Plant | 573.594.6425 | | |
| | EMAIL | | |
| | TRaught@thinkHWI.com | | |
| PHYSICAL ADDRESS (PHYSICAL) | CITY | STATE | ZIP CODE |
| 1000 Booker Street | Vandalia | MO | 63382 |

3. OWNER

| | | | |
|-------------------------------------|---------------------------------|-------|----------|
| NAME | TELEPHONE NUMBER WITH AREA CODE | | |
| HarbisonWalker International, Inc. | 412.375.6600 | | |
| | EMAIL | | |
| | TRaught@thinkHWI.com | | |
| MAILING ADDRESS | CITY | STATE | ZIP CODE |
| 1305 Cherrington Parkway, Suite 100 | Moon Township | PA | 15108 |

3.1 Do you want to review draft permit prior to public notice? ☐ Yes ☐ No

4. CONTINUING AUTHORITY

| | | | |
|-------------------------------------|---------------------------------|-------|----------|
| NAME | TELEPHONE NUMBER WITH AREA CODE | | |
| HarbisonWalker International, Inc. | 412.375.6600 | | |
| | EMAIL | | |
| | TRaught@thinkHWI.com | | |
| MAILING ADDRESS | CITY | STATE | ZIP CODE |
| 1305 Cherrington Parkway, Suite 100 | Moon Township | PA | 15108 |

5. OPERATOR

| | | | |
|-----------------|--------------------|---------------------------------|----------|
| NAME | CERTIFICATE NUMBER | TELEPHONE NUMBER WITH AREA CODE | |
| | | | |
| | EMAIL | | |
| | | | |
| MAILING ADDRESS | CITY | STATE | ZIP CODE |
| | | | |

6. FACILITY CONTACT

| | | |
|------------|---------------------|---------------------------------|
| NAME | TITLE | TELEPHONE NUMBER WITH AREA CODE |
| John Hodde | Plant Engineer | 573.594.6425 |
| | EMAIL | |
| | JHodde@thinkHWI.com | |

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal description of outfalls (Attach additional sheets, if necessary.)

001 NE ¼ SW ¼ Sec 8 T 52N R 5W Audr County
UTM Coordinates Easting (X): 630188 Northing (Y): 4350460

For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

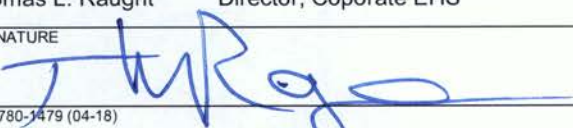
002 NW ¼ SW ¼ Sec 8 T 52N R 5W Audr County
UTM Coordinates Easting (X): 629399 Northing (Y): 4350815

003 SW ¼ SW ¼ Sec 8 T 52N R 5W Audr 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 North American Industrial Classification System (NAICS) codes

001 – SIC 3297 and NAICS 327120 002 – SIC 3297 and NAICS 327120
003 – SIC 3297 and NAICS 327120 004 – SIC and NAICS

| | | | |
|---|---|---|--|
| 8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE APPLICATION (Complete all applicable forms.) | | | |
| A. | Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? If yes, complete Form C or 2F. (2F is EPA's Application for Storm Water Discharges Associated with Industrial Activity.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| B. | Is application for stormwater discharges only? If yes, complete Form C or 2F. | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| C. | Is your facility considered a "primary industry" under EPA guidelines: If yes, complete Forms C or 2F and D. | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| D. | Is wastewater land-applied? If yes, complete Form I. | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| E. | Are biosolids, sludge, ash or residuals generated, treated, stored or land-applied? If yes, complete Form R. | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| F. | If you are a Class IA CAFO, disregard Parts D and E, above, but attach any revisions to the nutrient management plan. | | |
| G. | Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale. | | |
| 9. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM | | | |
| <p>Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, permittee shall report effluent limits and monitoring via an electronic system to ensure timely, complete, accurate and nationally consistent data. Check one of the following for this application to be considered complete. (Check only one.) To access the facility participation package, visit dnr.mo.gov/env/wpp/edmr.htm.</p> <p><input type="checkbox"/> You completed and submitted with this permit application the required documentation to participate in the eDMR system.</p> <p><input checked="" type="checkbox"/> You previously submitted required documentation to participate in the eDMR system and/or you currently use the eDMR system.</p> <p><input type="checkbox"/> You submitted a written request for a waiver from electronic reporting. See instructions for information regarding waivers.</p> | | | |
| 9. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary. See Instructions. PLEASE SHOW LOCATION ON MAP. SEE 8(D) ABOVE. | | | |
| NAME | | | |
| (A) SHADY CREEK: WENDELL TALBET (B) SPENCER CREEK: | | | |
| ADDRESS | | CITY | STATE ZIP CODE |
| (A) AUDRAIN RD (B) HIGHWAY P | | VANDALIA | MO 63382 |
| <p>11. I certify that I am familiar with the information contained in this application. To the best of my knowledge and belief, such information is true, complete and accurate. 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 to the Missouri Clean Water Commission available to the applicant under the Missouri Clean Water Law.</p> | | | |
| NAME AND OFFICIAL TITLE (TYPE OR PRINT) | | TELEPHONE NUMBER WITH AREA CODE | |
| Thomas L. Raught Director, Corporate EHS | | 412.375.6829 | |
| SIGNATURE | | DATE SIGNED | |
|  | | 7-16-18 | |

MO 780-1479 (04-18)

**BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETE.
ALSO INCLUDE APPLICABLE ADDITIONAL FORMS.**

Submitting an incomplete application may result in the application being returned.

HAVE YOU INCLUDED THE FOLLOWING?

- | | |
|--|--|
| <input type="checkbox"/> Appropriate fees <input checked="" type="checkbox"/> Map at 1" = 2000' scale <input checked="" type="checkbox"/> Signature <input checked="" type="checkbox"/> Form C or 2F, if applicable <input type="checkbox"/> Form D, if applicable | <input type="checkbox"/> Form I (Irrigation), if applicable <input type="checkbox"/> Form R (Sludge), if applicable <input type="checkbox"/> Revised nutrient management plan, if applicable |
|--|--|



Delegation of Authority
Singing of Permit and Permit Applications

On behalf of HarbisonWalker International, Inc., (the "Company"), whether acting for itself or as an agent for its affiliates and subsidiaries, I delegate the authority to execute, as an authorized representative of the Company, any necessary permits, permit applications, or annual or quarterly reports required thereby, related to the Environmental, Health and Safety (EHS) operations of all Company facilities to Thomas L. Raught, Director, Corporate EHS. The delegation established herein is limited to the specific subject matter referenced herein and is not intended to include similar documents that do not pertain to the EHS function of the Company.

This delegation shall continue indefinitely, and may be revoked at any time by written notice from the Company

A handwritten signature in black ink, appearing to read "D. A. Hall", is written over a horizontal line.

Douglas A. Hall
Senior Vice President
Integrated Supply Chain

November 14, 2017

Date



January 2016

Outfall 003
© 2012 Google

39°17'38.83" N 129°40'40" W elev. 766 ft

Outfall 002

Outfall 001

Imagery Date: 4/8/2012

1995



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

HarbisonWalker International, Inc. Vandalia Plant

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

MO - 0000710

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 3297 NON-CLAY REFRACTORIES B. SECOND 3255 CLAY REFRACTORIES
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 | NE | SW | 1/4 | 8 | 52N 5W | Audrain |
| # 002 | NW | SW | 1/4 | 8 | 52N 5W | Audrain |
| # 003 | SW | SW | 1/4 | 8 | 52N 5W | Audrain |

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

| OUTFALL NUMBER (LIST) | RECEIVING WATER |
|-----------------------|--|
| #001 | BRANCH OF SHADY CREEK (CUIVRE RIVER BASIN) |
| #002 | BRANCH OF SPENCER CREEK (LOWER SALT RIVER BASIN) |
| #003 | BRANCH OF SHADY CREEK (CUIVRE RIVER BASIN) |

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

MANUFACTURER OF CLAY AND HIGH ALUMINA REFRACTORY PRODUCTS.

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.

[illegible]

2.40 CONTINUED

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

☐ YES (COMPLETE THE FOLLOWING TABLE)

☒ NO (GO TO SECTION 2.50)

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

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) | |
| N/A | | | |

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 |
| N/A | | | | | |

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.

[illegible]

3.10 BIOLOGICAL TOXICITY TESTING DATA

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

☐ YES (IDENTIFY THE TEST(S) AND DESCRIBE THEIR PURPOSES BELOW.)

☒ NO (GO TO 3.20)

3.20 CONTRACT ANALYSIS INFORMATION

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

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

☐ NO (GO TO 3.30)

| A. NAME | B. ADDRESS | C. TELEPHONE (area code and number) | D. POLLUTANTS ANALYZED (list) |
|------------------------|--|-------------------------------------|-------------------------------|
| INOVIATIA LABORATORIES | 120 EAST DAVIS ST., FAYETTE, MO 65248 | 606-248-1911 | |

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)

Thomas L. Raught

DIRECTOR, CORPORATE EHS

TELEPHONE NUMBER WITH AREA CODE

(412) 375-6829

SIGNATURE (SEE INSTRUCTIONS)

DATE SIGNED

7-16-15

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

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

| INTAKE AND EFFLUENT CHARACTERISTICS | | | | | | | | | | | OUTFALL NO. 001 | | | |
|--|---------------------------|--------------------------|---|----------|--|----------|--|------------------|-----------------------|--------------------------|----------------------|--------------------------|----------|-----------------------|
| PART A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details. | | | | | | | | | | | | | | |
| 1. POLLUTANT | 2. EFFLUENT | | | | | | 3. UNITS (specify if blank) | | 4. INTAKE (optional) | | | | | |
| | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE (if available) | | C. LONG TERM AVRG. VALUE (if available) | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANALYSES | | |
| | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | | | |
| A. Biochemical Oxygen Demand (BOD) | 3.00 | 2.553 | | | | | 1 | mg/L | Lbs/Day | | | | | |
| B. Chemical Oxygen Demand (COD) | 52.00 | 44.24 | | | | | 1 | mg/L | Lbs/Day | | | | | |
| C. Total organic Carbon (TOC) | 7.4 | 6.297 | | | | | 1 | mg/L | Lbs/Day | | | | | |
| D. Total Suspended Solids (TSS) | 9.00 | 7.658 | | | | | 1 | mg/L | Lbs/Day | | | | | |
| E. Ammonia (as N) | 0.16 | 0.136 | | | | | 1 | mg/L | Lbs/Day | | | | | |
| F. Flow | VALUE 0.1019 | | VALUE | | VALUE | | 1 | | MGD | VALUE | | | | |
| G. Temperature (winter) | VALUE 8.8 | | VALUE | | VALUE | | | °C | | VALUE | | | | |
| H. Temperature (summer) | VALUE | | VALUE | | VALUE | | | °C | | VALUE | | | | |
| I. pH | MINIMUM 7.52 | MAXIMUM 8.5 | MINIMUM | MAXIMUM | | | 2 | 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. CONCENTRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANALYSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| CONVENTIONAL AND NONCONVENTIONAL POLLUTANTS | | | | | | | | | | | | | | |
| A. Bromide (24959-67-9) | | X | | | | | | | | | | | | |
| B. Chlorine, Total Residual | | X | | | | | | | | | | | | |
| C. Color | | X | | | | | | | | | | | | |
| D. Fecal Coliform | | X | | | | | | | | | | | | |
| E. Fluoride (16984-48-8) | | X | | | | | | | | | | | | |
| F. Nitrate - Nitrate (as N) | | X | | | | | | | | | | | | |

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE (optional) | | |
|--|---------------------------|--------------------------|------------------------|----------|---|----------|--|----------|-----------------------|------------------|---------|--------------------------|----------|-----------------------|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE (if available) | | C. LONG TERM AVRG. VALUE (if available) | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANALYSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| G. Nitrogen, Total Organic (as N) | | X | | | | | | | | | | | | |
| H. Oil and Grease | X | | < 5.00 | < 4.25 | | | | | 1 | mg/L | Lbs/Day | | | |
| I. Phosphorus (as P), Total (7723-14-0) | | X | | | | | | | | | | | | |
| J. Sulfate (as SO ₄) (14808-79-8) | X | | 73.90 | 62.88 | | | | | 1 | mg/L | Lbs/Day | | | |
| K. Sulfide (as S) | | X | | | | | | | | | | | | |
| L. Sulfite (as SO ₃) (14265-45-3) | | X | | | | | | | | | | | | |
| M. Surfactants | | X | | | | | | | | | | | | |
| N. Aluminum, Total (7429-90-5) | X | | 0.343 | 0.292 | | | | | 1 | mg/L | Lbs/Day | | | |
| O. Barium, Total (7440-39-3) | | X | | | | | | | | | | | | |
| P. Boron, Total (7440-42-8) | | X | | | | | | | | | | | | |
| Q. Cobalt, Total (7440-48-4) | | X | | | | | | | | | | | | |
| R. Iron, Total (7439-89-6) | | X | | | | | | | | | | | | |
| S. Magnesium, Total (7439-95-4) | | X | | | | | | | | | | | | |
| T. Molybdenum, Total (7439-98-7) | | X | | | | | | | | | | | | |
| U. Manganese, Total (7439-96-5) | | X | | | | | | | | | | | | |
| V. Tin, Total (7440-31-5) | | X | | | | | | | | | | | | |
| W. Titanium, Total (7440-32-6) | | X | | | | | | | | | | | | |

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE (optional) | | |
|--|---------------------------|--------------------------|------------------------|----------|---|----------|--|----------|-----------------------|------------------|---------|--------------------------|----------|-----------------------|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE (if available) | | C. LONG TERM AVRG. VALUE (if available) | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANALYSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| METALS, AND TOTAL PHENOLS | | | | | | | | | | | | | | |
| 1M. Antimony, Total (7440-36-9) | | X | | | | | | | | | | | | |
| 2M. Arsenic, Total (7440-38-2) | | X | | | | | | | | | | | | |
| 3M. Beryllium, Total (7440-41-7) | | X | | | | | | | | | | | | |
| 4M. Cadmium, Total (7440-43-9) | | X | | | | | | | | | | | | |
| 5M. Chromium III (16065-83-1) | X | | < 0.025 | <0.019 | | | | | | mg/L | Lbs/Day | | | |
| 6M. Chromium VI (18540-29-9) | | X | < 0.025 | <0.019 | | | | | | mg/L | Lbs/Day | | | |
| 7M. Copper, Total (7440-50-8) | | X | | | | | | | | | | | | |
| 8M. Lead, Total (7439-92-1) | | X | | | | | | | | | | | | |
| 9M. Mercury, Total (7439-97-6) | | X | | | | | | | | | | | | |
| 10M. Nickel, Total (7440-02-0) | | X | | | | | | | | | | | | |
| 11M. Selenium, Total (7782-49-2) | | X | | | | | | | | | | | | |
| 12M. Silver, Total (7440-22-4) | | X | | | | | | | | | | | | |
| 13M. Thallium, Total (7440-28-0) | | X | | | | | | | | | | | | |
| 14M. Zinc, Total (7440-66-6) | | X | | | | | | | | | | | | |
| 15M. Cyanide, Amenable to Chlorination | | X | | | | | | | | | | | | |
| 16M. Phenols, Total | X | | < 0.05 | <0.043 | | | | | | mg/L | Lbs/Day | | | |
| RADIOACTIVITY | | | | | | | | | | | | | | |
| (1) Alpha Total | | X | | | | | | | | | | | | |
| (2) Beta Total | | X | | | | | | | | | | | | |
| (3) Radium Total | | X | | | | | | | | | | | | |
| (4) Radium 226 Total | | X | | | | | | | | | | | | |

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) | | | | | | | | | | | | | | |
| B. Chemical Oxygen Demand (COD) | | | | | | | | | | | | | | |
| C. Total organic Carbon (TOC) | | | | | | | | | | | | | | |
| D. Total Suspended Solids (TSS) | < 5.00 | < 6.73 | | | | | 1 | mg/L | Lbs/Day | | | | | |
| E. Ammonia (as N) | | | | | | | | | | | | | | |
| F. Flow | VALUE 0.161 | | VALUE | | VALUE | | 1 | | MGD | VALUE | | | | |
| G. Temperature (winter) | VALUE 10 | | VALUE | | VALUE | | 1 | °C | | VALUE | | | | |
| H. Temperature (summer) | VALUE | | VALUE | | VALUE | | | °C | | VALUE | | | | |
| I. pH | MINIMUM 6.91 | MAXIMUM 8.5 | MINIMUM | MAXIMUM | | | 2 | 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 | | | | | | | | | | | | |
| B. Chlorine, Total Residual | | X | | | | | | | | | | | | |
| C. Color | | X | | | | | | | | | | | | |
| D. Fecal Coliform | | X | | | | | | | | | | | | |
| E. Fluoride (16984-48-8) | | X | | | | | | | | | | | | |
| F. Nitrate - Nitrate (as N) | | X | | | | | | | | | | | | |

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. EFFLUENT | | | | | | | 4. UNITS | | 5. INTAKE (optional) | | |
|--|---------------------------|--------------------------|------------------------|----------|---|----------|--|----------|-----------------------|------------------|---------|--------------------------|----------|-----------------------|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE (if available) | | C. LONG TERM AVRG. VALUE (if available) | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS | A. LONG TERM AVRG. VALUE | | B. NO. OF ANALYSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| G. Nitrogen, Total Organic (as N) | | X | | | | | | | | | | | | |
| H. Oil and Grease | | X | < 5.00 | < 6.73 | | | | | 1 | mg/L | Lbs/Day | | | |
| I. Phosphorus (as P), Total (7723-14-0) | | X | | | | | | | | | | | | |
| J. Sulfate (as SO ₄) (14808-79-8) | X | | 33.6 | 45.23 | | | | | 1 | mg/L | Lbs/Day | | | |
| K. Sulfide (as S) | | X | | | | | | | | | | | | |
| L. Sulfite (as SO ₃) (14265-45-3) | | X | | | | | | | | | | | | |
| M. Surfactants | | X | | | | | | | | | | | | |
| N. Aluminum, Total (7429-90-5) | X | | 0.616 | 0.829 | | | | | 1 | mg/L | Lbs/Day | | | |
| O. Barium, Total (7440-39-3) | | X | | | | | | | | | | | | |
| P. Boron, Total (7440-42-8) | | X | | | | | | | | | | | | |
| Q. Cobalt, Total (7440-48-4) | | X | | | | | | | | | | | | |
| R. Iron, Total (7439-89-6) | | X | | | | | | | | | | | | |
| S. Magnesium, Total (7439-95-4) | | X | | | | | | | | | | | | |
| T. Molybdenum, Total (7439-98-7) | | X | | | | | | | | | | | | |
| U. Manganese, Total (7439-96-5) | | X | | | | | | | | | | | | |
| V. Tin, Total (7440-31-5) | | X | | | | | | | | | | | | |
| W. Titanium, Total (7440-32-6) | | X | | | | | | | | | | | | |

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

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. 003 | | |
|--|---------------------------|--------------------------|---|----------|--|----------|--|-----------------------|-----------------------|--------------------------|----------------------|--------------------------|----------|-----------------------|
| PART A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details. | | | | | | | | | | | | | | |
| 1. POLLUTANT | 2. EFFLUENT | | | | | | 3. UNITS (specify if blank) | | 4. INTAKE (optional) | | | | | |
| | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE (if available) | | C. LONG TERM AVRG. VALUE (if available) | | D. NO. OF 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) | | | | | | | | | | | | | | |
| B. Chemical Oxygen Demand (COD) | | | | | | | | | | | | | | |
| C. Total organic Carbon (TOC) | | | | | | | | | | | | | | |
| D. Total Suspended Solids (TSS) | <5.0 | <3.74 | | | | | 1 | mg/L | Lbs/Day | | | | | |
| E. Ammonia (as N) | | | | | | | | | | | | | | |
| F. Flow | VALUE 0.0897 | | VALUE | | VALUE | | 1 | | MGD | VALUE | | | | |
| G. Temperature (winter) | VALUE 1.1 | | VALUE | | VALUE | | 1 | | °C | VALUE | | | | |
| H. Temperature (summer) | VALUE | | VALUE | | VALUE | | | | °C | VALUE | | | | |
| I. pH | MINIMUM 7.1 | MAXIMUM 7.49 | MINIMUM | MAXIMUM | | | 1 | 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 | | | | | | | | | | | | |
| B. Chlorine, Total Residual | | X | | | | | | | | | | | | |
| C. Color | | X | | | | | | | | | | | | |
| D. Fecal Coliform | | X | | | | | | | | | | | | |
| E. Fluoride (16984-48-8) | | X | | | | | | | | | | | | |
| F. Nitrate - Nitrate (as N) | | X | | | | | | | | | | | | |

| 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 | | | | | | | | | | | | |
| H. Oil and Grease | | X | <5.0 | <3.74 | | | | | 1 | mg/L | Lbs/Day | | | |
| I. Phosphorus (as P), Total (7723-14-0) | | X | | | | | | | | | | | | |
| J. Sulfate (as SO ₄) (14808-79-8) | | X | | | | | | | | | | | | |
| K. Sulfide (as S) | | X | | | | | | | | | | | | |
| L. Sulfite (as SO ₃) (14265-45-3) | | X | | | | | | | | | | | | |
| M. Surfactants | | X | | | | | | | | | | | | |
| N. Aluminum, Total (7429-90-5) | | X | | | | | | | | | | | | |
| O. Barium, Total (7440-39-3) | | X | | | | | | | | | | | | |
| P. Boron, Total (7440-42-8) | | X | | | | | | | | | | | | |
| Q. Cobalt, Total (7440-48-4) | | X | | | | | | | | | | | | |
| R. Iron, Total (7439-89-6) | | X | | | | | | | | | | | | |
| S. Magnesium, Total (7439-95-4) | | X | | | | | | | | | | | | |
| T. Molybdenum, Total (7439-98-7) | | X | | | | | | | | | | | | |
| U. Manganese, Total (7439-96-5) | | X | | | | | | | | | | | | |
| V. Tin, Total (7440-31-5) | | X | | | | | | | | | | | | |
| W. Titanium, Total (7440-32-6) | | X | | | | | | | | | | | | |

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

