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-0117790
Owner:	Courtney Ridge Landfill, LLC
Address:	2001 North M-291 Highway, Sugar Creek, MO 64058
Continuing Authority:	Courtney Ridge Landfill, LLC
Address:	5605 Moreau River Access Road, Jefferson City, MO 65101
Facility Name:	Courtney Ridge Landfill
Facility Address:	2001 North M-291 Highway, Sugar Creek, MO 64058
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

Leachate cannot be discharged. Stormwater which has come into contact with leachate is considered leachate and cannot be discharged. Leachate, and stormwater which has come into contact with leachate, must be managed in accordance with the provisions contained in the Missouri Solid Waste Management Laws, regulations, and Sanitary Landfill Operating Permit; and Hazardous Waste Program (if applicable).

This permit authorizes only 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.

October 1, 2018
Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

September 30, 2023
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (CONTINUED)

Courtney Ridge Landfill is an active sanitary landfill. Also on site are a bulk storage area and a fueling station.

OUTFALL # 001 – Stormwater; SIC # 4953

Receives stormwater from 56 acres of active and closed landfill areas, fueling station, and the bulk storage facility after primary sedimentation treatment.

Legal Description:	Sec.13, T50N, R32W, Jackson County
UTM Coordinates:	X = 380012, Y = 4333709
Receiving Stream:	Tributary to Mill Creek
First Classified Stream and ID:	8-20-13 MUDD V.1.0; (C) WBID# 3960
USGS Basin & Sub-watershed No.:	Rush Creek-Missouri River (10300101-0306)
Actual flow:	Dependent upon precipitation

OUTFALL # 002 – Stormwater – SIC # 4953

Receives stormwater from areas of active landfill and a previous rock quarry

Legal Description:	Sec.18, T50N, R31W, Jackson County
UTM Coordinates:	X = 380844, Y = 4333860
Receiving Stream:	Tributary to Mill Creek
First Classified Stream and ID:	8-20-13 MUDD V.1.0; (C) WBID# 3960
USGS Basin & Sub-watershed No.:	Rush Creek-Missouri River (10300101-0306)
Actual flow:	Dependent upon precipitation

OUTFALLS #001 and #002 *Stormwater Only*	**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 **October 1, 2018** 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
PHYSICAL						
Flow	MGD	*			once/quarter ◊	24 hr. estimate
Precipitation	inches	*			once/quarter ◊	measured
CONVENTIONAL						
Chemical Oxygen Demand	mg/L	**		90	once/quarter ◊	grab ∞
Oil & Grease	mg/L	**		10	once/quarter ◊	grab ∞
pH Ω	SU	6.5 to 9.0		-	once/quarter ◊	grab ∞
Settleable Solids	mL/L/hr	**		1.5	once/quarter ◊	grab ∞
Total Suspended Solids	mg/L	**		80	once/quarter ◊	grab ∞
METALS						
Arsenic, Total Recoverable	µg/L	*		-	once/quarter ◊	grab ∞
Beryllium, Total Recoverable	µg/L	*		-	once/quarter ◊	grab ∞
Boron, Total Recoverable	µg/L	*		-	once/quarter ◊	grab ∞
Cadmium, Total Recoverable	µg/L	*		-	once/quarter ◊	grab ∞
Chromium (III), Total Recoverable	µg/L	*		-	once/quarter ◊	grab ∞
Chromium (VI), Dissolved	µg/L	*		-	once/quarter ◊	grab ∞
Copper, Total Recoverable	µg/L	*		-	once/quarter ◊	grab ∞
Iron, Total Recoverable	µg/L	**		4000	once/quarter ◊	grab ∞
Nickel, Total Recoverable	µg/L	*		-	once/quarter ◊	grab ∞
Selenium, Total Recoverable	µg/L	*		-	once/quarter ◊	grab ∞
Silver, Total Recoverable	µg/L	*		-	once/quarter ◊	grab ∞
Zinc, Total Recoverable	µg/L	*		-	once/quarter ◊	grab ∞
NUTRIENTS						
Ammonia as N	mg/L	*		-	once/quarter ◊	grab ∞
OTHER						
Benzene	µg/L	*		-	once/quarter ◊	grab ∞
Chloride	mg/L	*		-	once/quarter ◊	grab ∞
Chloride + Sulfate	mg/L	*		-	once/quarter ◊	grab ∞
Fluoride	mg/L	*		-	once/quarter ◊	grab ∞
Sulfate	mg/L	*		-	once/quarter ◊	grab ∞

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JANUARY 28, 2019.
THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

* Monitoring requirement only.

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

** Monitoring requirement with associated benchmark. See Special Conditions #4

∞ All samples shall be collected from a discharge resulting from a precipitation event greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable precipitation event. 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 28th
Second	April, May, June	Sample at least once during any month of the quarter	July 28th
Third	July, August, September	Sample at least once during any month of the quarter	October 28th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28th

B. STANDARD CONDITIONS

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

C. SPECIAL CONDITIONS

1. Electronic Discharge Monitoring Report (eDMR) Submission System
   (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
   (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
      (1) Any additional report required by the permit excluding bypass reporting.
      After such a system has been made available by the Department, required data shall be directly input into the system by the next report due date.
   (c) Other actions. The following shall be submitted electronically after such a system has been made available by the Department:
      (1) General Permit Applications/Notices of Intent to discharge (NOIs);
      (2) Notices of Termination (NOTs);
      (3) No Exposure Certifications (NOEs);
      (4) Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs); and
      (5) Bypass reporting.
   (d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.
   (e) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.

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

3. The facility's SIC code(s) or description is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) hence shall implement a SWPPP which must be prepared and implemented upon permit issuance. The SWPPP must be kept on-site and should not be sent to the Department unless specifically requested. The SWPPP must be reviewed and updated every five years or as site conditions change (see Part III: Antidegradation Analysis and SWPPP sections in the fact sheet). 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 February 2009 (www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf). 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) Slopes for disturbed areas must be defined in the SWPPP. A site map or maps defining the sloped areas must be included in the SWPPP.
      (1) For soil disturbing activities that have been temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days:
         i. The permittee shall construct BMPs to establish interim stabilization; and
         ii. Stabilization must be initiated immediately and completed within 14 calendar days.
      (2) For soil disturbing activities that have been permanently ceased on any portion of the site, final stabilization of disturbed areas must be initiated immediately and completed within 14 calendar days.
      (3) Allowances to the 14 day completion period for temporary and final stabilization may be made due to weather and equipment malfunctions. The use of allowances shall be documented in the SWPPP.
      (4) Interim stabilization shall consist of well-established and maintained BMPs that are reasonably certain to protect waters of the state from sediment pollution over an extended period of time. This may require adding more BMPs to an area than is normally used during daily operations. These BMPs may include a combination of sediment basins, check dams,

C. SPECIAL CONDITIONS (CONTINUED)

sediment fences and mulch. The types of BMPs used must be suited to the area disturbed, taking into account the number of acres exposed and the steepness of the slopes. If the slope of the area is greater than 3:1 (three feet horizontal to one foot vertical) or if the slope is greater than 3% and greater than 150 feet in length, then the permittee shall establish interim stabilization within seven days of ceasing operations on that part of the site.

(5) If vegetative stabilization measures are being implemented, stabilization is considered "installed" when all activities necessary to seed or plant the area are completed.

(b) The SWPPP must include a schedule for once per month site inspections and brief written reports. The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.

i. Operational deficiencies must be corrected within seven (7) calendar days.
ii. Minor structural deficiencies must be corrected within fourteen (14) calendar days.
iii. Major structural deficiencies must be reported to the regional office within seven (7) days of discovery. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including the general timing of the placement of the interim measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. The permittee will work with the regional office to determine the best course of action, including but not limited to temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.
iv. All actions taken to correct the deficiencies shall be included with the written report, including photographs.
v. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to Department and EPA personnel upon request.

(c) A provision for designating an individual to be responsible for environmental matters.

A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of the Department.

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

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

5. Permittee shall adhere to the following minimum Best Management Practices (BMPs):
   (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of stormwater from these substances.
   (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
   (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater. Any spills should be noted in the SWPPP.
   (d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.

6. Permittee shall design, install, and maintain effective erosion and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed, and maintained to:
   (a) Control stormwater volume and velocity within the site to minimize soil erosion;
   (b) Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion;
   (c) Minimize the amount of soil exposed during land disturbance activity;
   (d) Minimize the disturbance of steep slopes;

C. SPECIAL CONDITIONS (CONTINUED)

(e) Minimize sediment discharges from the site. Design, install and maintain erosion and sediment controls that address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle size expected to be present on the site;
(f) Provide and maintain natural buffers around surface waters when feasible;
(g) Direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration and filtering, unless infeasible; and
(h) Minimize soil compaction and, unless infeasible, preserve topsoil.

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

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

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

10. 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).

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

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

C. SPECIAL CONDITIONS (CONTINUED)

(f) When calculating monthly averages, one-half of the minimum detection limit (MDL) should be used instead of a zero. Where all data are below the MDL, the "<MDL" shall be reported as indicated in item (C).

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0117790
COURTNEY RIDGE LANDFILL

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

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)(A)2.] a factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (MSOP or operating permit) listed below. A factsheet is not an enforceable part of an operating permit.

Part I. FACILITY INFORMATION

Facility Type: Industrial Stormwater
Facility SIC Code(s): 4953
Application Date: 03/28/2018
Modification Date: 04/01/2017 - eDMR
Expiration Date: 09/30/2018
Last Inspection: 11/21/2014; not in compliance at time of inspection

FACILITY DESCRIPTION:
Courtney Ridge is an active sanitary landfill. They have two outfalls which discharge from sedimentation basins. There is a rock quarry on site that is not currently active and will be used for active landfill as the need arises for more landfill space. There are no-discharge leachate holding cells onsite which are under the management of the Solid Waste Management Program.

OUTFALL	AVERAGE FLOW (MGD)	FLOW IN A 10 YR 24 HR RAIN EVENT (MGD)	TREATMENT LEVEL	EFFLUENT TYPE
#001	Dependent on precipitation	5	BMPs, Primary Sedimentation	Industrial Stormwater
#002	Dependent on precipitation	17.4	BMPs, Primary Sedimentation	Industrial Stormwater

FACILITY PERFORMANCE HISTORY & COMMENTS:
The electronic discharge monitoring reports were reviewed for the last permit cycle. No exceedances of permitted limits were noted. The facility was found to be out of compliance at their last WPP inspection on 11/21/2014. The inspector noted waste collection containers exposed to the elements. The facility said the waste collection containers were stored outside only temporarily, and they do not routinely store them outdoors. The facility is considered to be in compliance at this time.

The permittee did not utilize sufficiently sensitive laboratory methods for selenium in the past two permit cycles. This was mentioned in the last permit renewal; however, the permittee has not switched methods to comply with Standard Conditions Part I conditions dated August 1, 2014 and hereby incorporated as though fully set forth herein. The permittee must utilize sufficiently sensitive methods to comply with this permit. Please see Part V: Sufficiently Sensitive Methods for more information. Failing to utilize sufficiently sensitive methods is a violation of this permit. The chosen method must be 40 CFR Part 136 compliant, and be sufficiently sensitive to show compliance with the water quality standard found in 10 CSR 20-7.031 Table A of 5 µg/L.

FACILITY MAP:

MAJOR WATER USER:

Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons (or 70 gallons per minute) or more per day combined from all sources from any stream, river, lake, well, spring, or other water source is considered a major water user in Missouri. All major water users are required by law to register water use annually (Missouri Revised Statues Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). https://dnr.mo.gov/pubs/pub2337.htm

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

Part II. Receiving Waterbody Information

Receiving Water Body's Water Quality:
The receiving streams, both named Tributary to 8-20-13 MUDD V 1.0 have no concurrent water quality data available. Neither receiving stream is on the 303d list nor do they have a TMDL associated with them. No other relevant water quality information was found.

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 that 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/

✓ Applicable; The Missouri River (356) is associated with the 2006 EPA Approved TMDL for PCBs and Chlordane.

✓ This facility is not considered to be a source of the above listed pollutants or considered to contribute to the impairment of the Missouri River watershed.

Applicable Designations of Waters of the State:

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

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

Receiving Waterbody Table:

Outfall	Waterbody Name	Class	WBID	Designated Uses*	Distance to Segment	12-digit HUC
#001	Tributary to Mill Creek	n/a	n/a	GEN	0.2 mi	10300101-0306 Rush Creek-Missouri River
	Mill Creek (8-20-13 MUDD V 1.0)	C	3960	WWH (AQL), IRR, LWW, SCR, WBC-B, HHP		
#002	Tributary to Mill Creek	n/a	n/a	GEN	0.4 mi	
	8-20-13 MUDD V 1.0	C	3960	WWH (AQL), IRR, LWW, SCR, WBC-B, HHP		

n/a not applicable
WBID = Waterbody IDentification: Missouri Use Designation Dataset 8-20-13 MUDD V1.0 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
* As per 10 CSR 20-7.031 Missouri Water Quality Standards, 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 to be maintained are in the receiving stream table 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.:
AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish shellfish and wildlife, which is 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 AQL effluent limitations in 10 CSR 20-7.031 Table A 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 supporting swimming;
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;
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 Table A 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

MIXING CONSIDERATIONS:
Mixing zone: not allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].
Zone of initial dilution: not allowed [10 CSR 20-7.031(5)(A)4.B.(I)(b)].

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

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

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

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

ANTI-BACKSLIDING:
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.
  ✓ Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) which would have justified the application of a less stringent effluent limitation.
    - The permit writer has used available DMR data to determine BOD_5, ethylbenzene, lead, toluene, and total dissolved solids are not pollutants of concern at this site. They were removed from monitoring in this renewal.
    - The limit on chloride + sulfates was removed in this renewal, as the DMR data showed no reasonable potential for exceedances. Monitoring is continued.
    - The benchmark on selenium is removed as the permittee commits to finding a laboratory test to meet the water quality standards for selenium.
  ✓ The Department determined technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).
    - 5 years of DMR data were supplied to the permit writer which support conversion of oil and grease at outfalls #001 & #002 to benchmarks. The data demonstrated no reasonable potential to exceed water quality standards, either numeric or narrative. The benchmark concentrations and required corrective actions within this permit are protective of the receiving stream's uses to be maintained.
    - The previous permit contained a specific set of prohibitions related to general criteria found in 10 CSR 20-7.031(4); however, there was no determination as to whether the discharges have reasonable potential to cause or contribute to excursion of those general water quality standards in the previous permit. Federal regulations 40 CFR 122.44(d)(1)(iii) requires that in instances were 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 and establishing numeric effluent limitations for specific pollutant parameters, 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) 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 that the discharges will not cause or contribute to excursions of general criteria. Removal of the prohibitions does not reduce the protections of the permit or allow for impairment of the receiving stream. The permit maintains sufficient effluent limitations, monitoring requirements and best management practices to protect water quality.

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

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

For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the antidegradation analysis performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

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

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

Because of the fleeting nature of stormwater discharges, the Department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) Section 3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater only outfalls will generally only contain a maximum daily limit (MDL), benchmark, or monitoring requirement determined by the site specific conditions including the receiving water's current quality. While inspections of the stormwater BMPs occur monthly, facilities with no compliance issues are usually expected to sample stormwater quarterly.

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

✓ Applicable; this facility has stormwater-only outfalls with benchmark constraints. The benchmarks listed are consistently achieved in stormwater discharges by a variety of other industries with SWPPPs.

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.

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

✓ The facility has an associated ELG (40 CFR 445) but does not discharge wastewater to waters of the state; uncontaminated stormwater discharges are not addressed by the ELG.

GROUNDWATER MONITORING:
Groundwater is a water of the state according to 10 CSR 20-7.015(1)11, and is subject to regulations at 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.

✓ The department's Solid Waste Division is overseeing the groundwater monitoring at the site. At this time, the data is not reported to the WPP.

REASONABLE POTENTIAL ANALYSIS (RPA):
Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are (or may be) discharged at a level causing or have the reasonable potential to cause (or contribute to) an in-stream excursion above narrative or numeric water quality standards. If the permit writer determines any given pollutant has the reasonable potential to cause or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant [40 CFR Part 122.44(d)(1)(iii)].

- ✓ Not applicable; an 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.
- ✓ Permit writers use the Department's permit writer's manual (http://dnr.mo.gov/env/wpp/permits/manual/permit-manual.htm), the EPA's permit writer's manual (https://www.epa.gov/npdes/npdes-permit-writers-manual), program policies, and best professional judgment. For each parameter in each permit, the permit writer carefully considers all applicable information regarding: technology based effluent limitations, effluent limitation guidelines, water quality standards, stream flows and uses, and all applicable site specific information and data gathered by the permittee through discharge monitoring reports and renewal (or new) application sampling. Best professional judgment is based on the experience of the permit writer, cohorts in the Department and resources at the EPA, research, and maintaining continuity of permits if necessary. For stormwater permits, the permit writer is required per 10 CSR 6.200(6)(B)2 to consider: A. application and other information supplied by the permittee; B. effluent guidelines; C. best professional judgment of the permit writer; D. water quality; and E. BMPs. Part V provides specific decisions related to this permit.

SCHEDULE OF COMPLIANCE (SOC):
A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. SOCs are allowed under 40 CFR 122.47 providing certain conditions are met.

- ✓ Not applicable; this permit does not contain a SOC.

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

SLUDGE – DOMESTIC BIOSOLIDS:
Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for beneficial use (i.e. fertilizer). Sewage sludge is solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information: http://extension.missouri.edu/main/DisplayCategory.aspx?C=74 (WQ422 through WQ449).

- ✓ Not applicable; this condition is not applicable to the permittee for this facility.

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

- ✓ Permittee is not authorized to land apply industrial sludge. Sludge is stored in the lagoon.

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

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

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

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

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

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

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

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

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

If parameter-specific numeric exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the permittee can submit a request to re-evaluate the benchmark values. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values; 2) financial data of the company and documentation of cost associated with BMPs for review and 3) the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. This will allow the

Department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request shall be submitted in the form of an operating permit modification; the application is found at: http://dnr.mo.gov/forms/index.html.

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

TECHNOLOGY-BASED EFFLUENT LIMITATIONS (TBEL):

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

✓ Not applicable; this facility does not discharge process wastewater therefore is not subject to TBEL POC analysis.

VARIANCE:

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

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

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

✓ Not applicable; wasteload allocations were not calculated.

WLA MODELING:

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

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

WATER QUALITY STANDARDS:

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

WHOLE EFFLUENT TOXICITY (WET) TEST:

A WET test is a quantifiable method to determine discharges from the facility cause toxicity to aquatic life by itself, in combination with, or through synergistic responses, when mixed with receiving stream water.

✓ Not applicable; at this time, the permittee is not required to conduct WET testing for this facility.

Part IV. EFFLUENT LIMITS DETERMINATION

Effluent limitations derived and established for this permit are based on current operations of the facility. Effluent means both process water and stormwater. Any flow through the outfall is considered a discharge and must be sampled and reported as provided below. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

GENERAL CRITERIA CONSIDERATIONS:

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants which have been determined to cause, have the reasonable potential to cause, or to contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect that narrative criterion. The previous permit included the narrative criteria as specific prohibitions placed upon the discharge. These prohibitions were included in the permit absent any discussion of the discharge's reasonable potential to cause or contribute to an excursion of the criterion. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether the discharge has reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches that of the rule itself, under 10 CSR 20-7.031(4)). In instances where reasonable

potential exists, the permit includes numeric limitations to address the reasonable potential. In instances where reasonable potential does not exist the permit includes monitoring of the discharges potential to impact the receiving stream's narrative criteria. Finally, all of the previous permit narrative criteria prohibitions have been removed from the permit given they are addressed by numeric limits where reasonable potential exists. It should also be noted that Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state that it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri that is in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule, or regulation promulgated by the commission.

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

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for oil in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal or during prior sampling for DMR requirements for these outfalls indicates oil will be present in sufficient amounts to impair beneficial uses.
- For all outfalls, there is no RP for scum and floating debris in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates scum and floating debris will be present in sufficient amounts to impair beneficial uses
- Solid waste regulations found at 10 CSR 80-3.010(8)(B) require operation of the landfill in such a manner as to prevent flow onto the active portion of the sanitary landfill during peak discharge from at least a 25 year storm. In addition, 10 CSR 80-3.010(8)(C) requires water which has contacted solid waste at the working face to be treated as leachate and sent to the leachate disposal system. These regulations mean no RP for solid waste to contact effluent which is discharged to the receiving stream.

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for unsightly color or turbidity in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates unsightly color or turbidity will be present in sufficient amounts to impair beneficial uses.
- For all outfalls, there is no RP for offensive odor in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates offensive odor will be present in sufficient amounts to impair beneficial uses. It is not expected that stormwater will contain anything with offensive odor.
- Solid waste regulations found at 10 CSR 80-3.010(8)(B) require operation of the landfill in such a manner as to prevent flow onto the active portion of the sanitary landfill during peak discharge from at least a 25 year storm. In addition, 10 CSR 80-3.010(8)(C) requires water which has contacted solid waste at the working face to be treated as leachate and sent to the leachate disposal system. These regulations mean no RP for solid waste to contact effluent which is discharged to the receiving stream.

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

(E) There shall be no significant human health hazard from incidental contact with the water.
- It is the permit writer's opinion that this criterion is the same as (D).

(F) There shall be no acute toxicity to livestock or wildlife watering.
- It is the permit writer's opinion that this criterion is the same as (D).

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

- For all outfalls, there is no RP for hydrologic changes that would impair the natural biological community because nothing disclosed by the permittee at renewal for these outfalls indicates hydrologic changes that would impair the natural biological community.
- It has previously been established that any chemical changes are covered by the specific numeric effluent limitations established in the permit.

(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 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.

OUTFALL #001 & #002 – STORMWATER OUTFALLS

PARAMETERS OUTFALL 001	UNIT	DAILY MAXIMUM LIMIT	BENCHMARK	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	24 HR. EST.
PRECIPITATION	INCHES	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	24 HR. TOT
CONVENTIONAL							
BOD_5	REMOVED FROM MONITORING						
COD	MG/L	**	90	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
OIL & GREASE	MG/L	**	10	10LIMIT	ONCE/QUARTER	ONCE/QUARTER	GRAB
PH ǂ	SU	6.5 TO 9.0	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
SETTLEABLE SOLIDS	ML/L/HR	**	1.5	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
TOTAL DISSOLVED SOLIDS	REMOVED FROM MONITORING						
TSS	MG/L	**	80	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
METALS							
ARSENIC, TR	µg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
BERYLLIUM, TR	µg/L	*		SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
BORON, TR	µg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CADMIUM, TR	µg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CHROMIUM (III), TR	µg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CHROMIUM (VI), DISS.	µg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
COPPER, TR	µg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
IRON, TR	µg/L	**	4000	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
LEAD, TR	REMOVED FROM MONITORING						
NICKEL, TR	µg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
SELENIUM, TR	µg/L	*	-	BENCHMARK	ONCE/QUARTER	ONCE/QUARTER	GRAB
SILVER, TR	µg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
ZINC, TR	µg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
NUTRIENTS							
AMMONIA	mg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
OTHER							
BENZENE	µg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CHLORIDE	mg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CHLORIDE + SULFATE	mg/L	*	-	1000LIMIT	ONCE/QUARTER	ONCE/QUARTER	GRAB
ETHYLBENZENE	REMOVED FROM MONITORING						
FLUORIDE	mg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
SULFATE	mg/L	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
TOLUENE	REMOVED FROM MONITORING						

* Monitoring requirement only
** Monitoring with associated benchmark
ǂ Report the minimum and maximum pH values; pH is not to be averaged.
TR Total Recoverable

DERIVATION AND DISCUSSION OF LIMITS:
The permittee indicated that the expected effluent at outfall #002 is very similar to outfall #001; therefore Outfall #001 and #002 have identical limits and benchmarks. All parameters at each outfall will be sampled quarterly.

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).

Precipitation
Monitoring only requirement; measuring the amount of precipitation [(10 CSR 20-6.200(2)(C)1.E(VI)] during an event is necessary to ensure adequate stormwater management exists at the site. Knowing the amount of potential stormwater runoff can provide the permittee a better understanding of specific control measure that should be employed to ensure protection of water quality. The facility will provide the 24 hour accumulation value of precipitation from the day of sampling the other parameters. It is not necessary to report all days of precipitation during the quarter because of the readily available on-line data.

CONVENTIONAL:

Biochemical Oxygen Demand (BOD_5)
Removed from monitoring. The permit writer reviewed DMR data and determined BOD is not a pollutant of concern at this site, therefore monitoring is removed at outfalls #001 and #002.

Chemical Oxygen Demand (COD)
Quarterly monitoring with a 90 mg/L benchmark is continued from the previous permit. There were no exceedances of the benchmark in the previous permit cycle. COD is a pollutant of concern associated with landfills as identified in the Federal MSGP, 8.K.5, Table 8.K-1, Subsector K1. COD is the measurement of water's capacity to consume oxygen during decomposition of organic matter and the oxidation of inorganic chemicals. There is no water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the permittee to identify increases in COD that may indicate materials/chemicals coming into contact with stormwater that cause an increase in oxygen demand. Increases in COD may indicate a need for maintenance or improvement of BMPs. Additionally, a benchmark value will be implemented for this parameter. The benchmark value falls within the range of values implemented in other permits that have similar industrial activities.

Oil & Grease
Quarterly monitoring with a daily maximum benchmark of 10 mg/L. The previous permit required a daily maximum limit of 10 mg/L. After assessment of the available DMR data, the permit writer determines no reasonable potential to exceed water quality standards, either numeric or narrative; therefore, benchmarks are appropriate for this discharge. 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 A: *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.

pH
6.5 to 9.0 SU, continued from the previous permit. The Water Quality Standard at 10 CSR 20-7.031(5)(E) states water contaminants shall not cause pH to be outside the range of 6.5 to 9.0 standard pH units.

Settleable Solids (SS)
Quarterly monitoring, with a daily maximum benchmark set at 1.5 mL/L/hr, continued from the previous permit. There were no exceedances of this parameter in the previous permit cycle. There is no water quality standard for SS; however, sediment discharges can negatively impact aquatic life. Increased settleable solids are known to interfere with multiple stages of the life cycle in many benthic organisms. For example, they can smother eggs and young or clog the crevasses that benthic organisms use

for habitat. Settleable solids are also a valuable indicator parameter. Solids monitoring allows the permittee to identify increases in sediment and solids that may indicate uncontrolled materials leaving the site.

Total Dissolved Solids (TDS)
Removed from monitoring. DMR data did not show reasonable potential to exceed narrative water quality standards. Additionally, there is no numeric water quality standard to compare this parameter to. Solids continue to be monitored through total suspended solids and settleable solids. TDS is used as an indicator parameter for leachate, and there are other indicator parameters for leachate in this permit. For these reasons, the permit writer uses best professional judgment to remove this parameter from monitoring at both outfall #001 and #002.

Total Suspended Solids (TSS)
Quarterly monitoring, with a daily maximum benchmark of 80 mg/L, continued from the previous permit. 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 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. A benchmark value will be implemented for this parameter. The benchmark value is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities. The DMR reports indicate the facility is able to meet the benchmark with currently installed technology.

METALS:
General warm-water habitat criteria apply (WWH) designated as AQL in 10 CSR 20-7.031 Table A. Additional use criterion (HHP, DWS, GRW, IRR, or LWW) may also be used as applicable to determine the most protective effluent limit for the stream class and uses.

Arsenic, Total Recoverable
Quarterly monitoring only, continued from the previous permit. Arsenic was used as a preservative for treating wood, and was used in numerous agricultural insecticides and poisons. There have been no exceedances of this parameter at this outfall; however, there are not enough available data points to determine the reasonable potential for exceedance of this parameter at this outfall.

Beryllium, Total Recoverable
Quarterly monitoring only, continued from the previous permit. Beryllium has numerous industrial uses due to its light weight and particular chemical properties, especially as an alloy. There is potential for wastes from these uses to be found at a landfill site. After reviewing DMR data it is noted there have been no exceedances of the aquatic life standards at this outfall; however, there are not enough available data points to determine the reasonable potential for exceedance.

Boron, Total Recoverable
Quarterly monitoring only, continued from the previous permit. Boron has numerous industrial uses, including as an abrasive, or in metal coatings, detergents, insecticides, and adhesives. Additionally, it is used in soaps and detergents, flame retardants, antiseptics, cosmetics, and pharmaceuticals. There is potential for wastes from these uses to be found at a landfill site. There are no aquatic life, drinking water, or human health protections for boron; however, it has a 2000 µg/L standard for protection of irrigation uses, and the receiving stream is protected by the general criteria which are applicable to all waters of the state per 10 CSR 20-7.031 (4) . There have been no exceedances of the IRR WQS at this outfall; however, there are not enough available data points to determine the reasonable potential for exceedance of this parameter.

Cadmium, Total Recoverable
Quarterly monitoring only, continued from the previous permit. Cadmium has numerous industrial uses, including electroplating, paint, batteries, and metal polish, among others. There is potential for wastes from these uses to be found at a landfill site. After reviewing five years of DMR data it is noted there have been no exceedances of water quality standards at this outfall; however, there are not enough available data points to determine the reasonable potential for exceedance of this parameter at this outfall.

Chromium (III), Total Recoverable
Quarterly monitoring only, continued from the previous permit. Chromium III has several industrial uses, including chrome plating, the manufacture of dye and pigments, leather and wood preservation, and as an alloy with other metals. There is potential for wastes from these uses to be found at a landfill site. There have been no exceedances of the aquatic life standard at this outfall; however, there are not enough available data points to determine the reasonable potential for exceedance of this parameter at this outfall.

Chromium (VI), Total Recoverable
Quarterly monitoring only, continued from the previous permit. Chromium VI has several industrial uses, including chrome plating, the manufacture of dye and pigments, leather and wood preservation, and as an alloy with other metals. There is potential for wastes from these uses to be found at a landfill site. There have been no exceedances of the acute aquatic life standard at this outfall; however, 10 µg/L is consistently reported. 10 µg/L is the chronic standard for protection of aquatic life found in 10 CSR 20-7.031 table A.

Copper, Total Recoverable
Quarterly monitoring only, continued from the previous permit. Copper has numerous industrial uses, from alloys and antimicrobial applications, to wires, cables and paints. It is used as a stabilizing agent in chemical products. Copper is highly toxic to aquatic life, and is a pollutant which is frequently a water quality issue for landfill sites. There have been no exceedances of the aquatic life standards at this outfall; however, there are not enough available data points to determine the reasonable potential for exceedance of this parameter.

Iron, Total Recoverable
Quarterly monitoring with a benchmark set at 4000 µg/L, continued from the last permit. There were no exceedances of this benchmark in the previous permit cycle. Iron is a pollutant of concern at landfills as identified in the EPA's MSGP, Part 8, Subpart L.

Lead, Total Recoverable
Removed from monitoring. Lead (TR) values reported on the DMR reports are below detection limit and show no reasonable potential to exceed water quality standards.

Nickel, Total Recoverable
Quarterly monitoring only, continued from the previous permit. Nickel is primarily used as an alloy with other metals. It can be found in magnets, rechargeable batteries, and as an anti-corrosive coating. There is potential for wastes from these uses to be found at a landfill site. There have been no exceedances of the water quality standards found in 10 CSR 20-7.031 Table A at this outfall; however, there are not enough available data points to determine the reasonable potential for exceedance of this parameter.

Selenium, Total Recoverable
Quarterly monitoring only . The DMRs show 15 µg/L for every reported data point. The permittee must utilize sufficiently sensitive methods to comply with this permit. Please see Part V: Sufficiently Sensitive Methods for more information. Failing to utilize sufficiently sensitive methods is a violation of this permit. The chosen method must be 40 CFR Part 136 compliant, and be sufficiently sensitive to show compliance with the water quality standard found in 10 CSR 20-7.031 Table A of 5 µg/L. The benchmark of 8.2 µg/L is removed from this parameter as the permittee has committed to working with the laboratory to utilize sufficiently sensitive methods.

Silver, Total Recoverable
Quarterly monitoring only, continued from the previous permit. Silver is primarily used industrially in electronics. There is potential for wastes from these uses to be found at a landfill site. There have been no exceedances of the water quality standards found in 10 CSR 20-7.031 Table A at this outfall; however, there are not enough available data points to determine the reasonable potential for this parameter.

Zinc, Total Recoverable
Quarterly monitoring only, continued from the previous permit. Zinc has numerous industrial applications, the most prevalent of which are batteries and anti-corrosion agents. It is also commonly used as an alloy and in industrial chemical compounds such as flame retardants and wood preservatives. It can also be found in agricultural fungicides. There is potential for wastes from these uses to be found at a landfill site. There have been no exceedances of the aquatic life standards found in 10 CSR 20-7.031 Table A at this outfall; however, there are not enough available data points to determine the reasonable potential.

NUTRIENTS:

Ammonia, Total as Nitrogen
Quarterly monitoring only, continued from the previous permit. Ammonia is a pollutant of concern for landfills, as identified in the federal ELG found at 40 CFR 445, and is a primary component of leachate. There were no exceedances of water quality standards in the previous permit cycle.

OTHER:

Benzene
Quarterly monitoring only, continued from the previous permit. Benzene is a volatile organic compound and a common component of gasoline. It is used as an intermediate in the production of numerous other chemicals, especially phenols and acetones. The landfill has heavy truck traffic, and wastes containing benzene are potentially discarded at this site. There have been no exceedances of the water quality standards for benzene at this outfall.

Chloride
Quarterly monitoring only, continued from the previous permit. There were no exceedances of the water quality standards in the previous permit. Monitoring for this parameter is required for the combined chloride and sulfate reporting.

Chloride + Sulfate
Quarterly monitoring only. Limits are removed on this parameter as levels of chloride + sulfate have been generally well below the water quality standard since the closure of the rock quarry in 2015. Monitoring is continued, as this is a pollutant of concern at this site.

Ethylbenzene
Removed from this permit. DMR data shows this is not a pollutant of concern at this site. Hydrocarbon discharges will continue to be monitored through benzene for this permit.

Fluoride
Quarterly monitoring only, continued from the previous permit. Fluoride is a pollutant of concern at landfills. There have been no exceedances of the LWW WQS at this outfall; however, there are not enough available data points to determine the reasonable potential for exceedance.

Sulfate
Quarterly monitoring only, continued from the previous permit. Discharge values range from 73.5 mg/L to 408 mg/L. Monitoring for this parameter is required for compliance with chloride and sulfate limits.

Toluene
Removed from this permit. DMR data shows this is not a pollutant of concern at this site. Hydrocarbon discharges will continue to be monitored through benzene for this permit.

Part V. SAMPLING AND REPORTING REQUIREMENTS:

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

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

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is non-transferable.

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

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

SAMPLING FREQUENCY JUSTIFICATION:
Sampling and reporting frequency was generally retained from previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges shall be permitted with daily maximum and monthly average limits. Sampling frequency for stormwater-only outfalls is typically quarterly even though BMP inspection occurs monthly. The facility may sample more frequently if additional data is required to determine if best management operations and technology are performing as expected.

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

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

Part VI. Administrative Requirements

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

Permit Synchronization:
The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. http://dnr.mo.gov/env/wpp/cpp/docs/watershed-based-management.pdf. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than three years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.
✓ *This permit will remain synchronized by expiring the end of the 3rd quarter, 2023.*

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

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

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

☒ The Public Notice period for this operating permit was from 05/25/2018 to 06/25/2018. No responses were received.

Date of Fact Sheet: 05/14/2018

Completed By:

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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.

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

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

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

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

Section D – Administrative Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

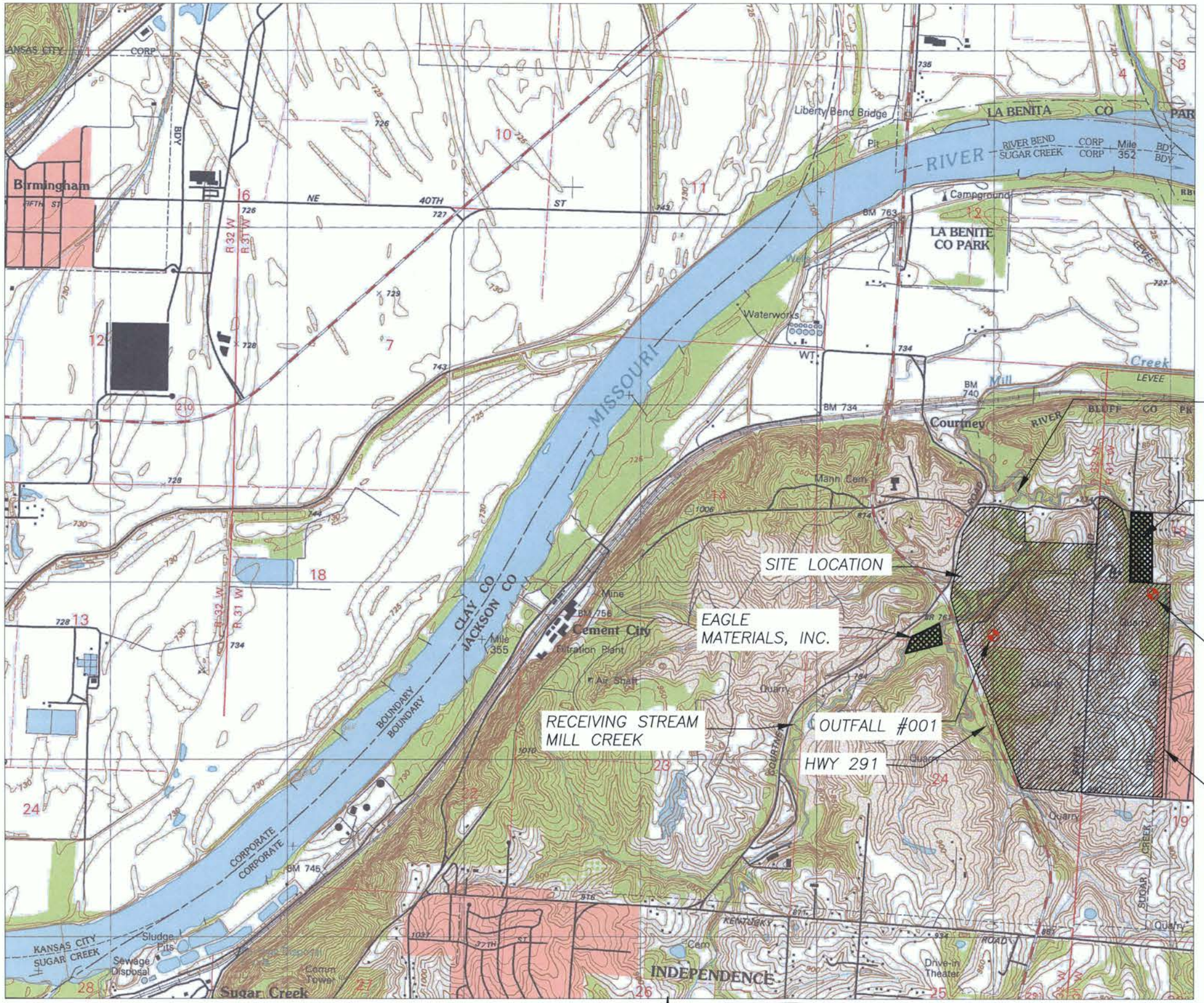
11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
    a. Enter upon the permittee's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

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

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

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

USGS Quadrangle Map



NOTES:

7.5 MINUTE SERIES TOPOGRAPHY MAP OF THE LIBERTY QUADRANGLE TAKEN FROM THE USGS WEBSITE.

APPROXIMATE GRAPHIC SCALE

2000 0 1000 2000 4000

1 inch = 2000ft.

N

PREPARED FOR:

COURTNEY RIDGE LANDFILL, LLC

SITE LOCATION

COURTNEY RIDGE LANDFILL
2001 NORTH HWY 291
SUGAR CREEK, MO

REUSE OF DOCUMENTS

THIS DOCUMENT, AND THE DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF WEAVER CONSULTANTS GROUP, AND IS NOT TO BE USED IN WHOLE OR IN PART, WITHOUT THE WRITTEN AUTHORIZATION OF WEAVER CONSULTANTS GROUP.

Weaver Consultants Group
COLUMBIA, MISSOURI
(888) 660-0346 www.wcgrp.com

DRAWN BY:	DT
REVIEWED BY:	MAC
DATE:	3/23/2018
FILE:	0120-155-10
CAD:	Figure 1 - Site Location.dwg

FIGURE 1

Site Plan

OUTFALL #002

BORROW AREA

PONDING STORM WATER FROM EAST SLOPE OF LANDFILL IS PUMPED OUT TO OUTFALL #002

ACTIVE FACE STORAGE AREA
- 2000 GAL. DIESEL AST
- 300 GAL. USED OIL AST
- 3 – 100 GAL. MISC. PETROLEUM TANKS

OUTDOOR FUELING AREA
- 2 – 4996 GAL. DIESEL ASTs

INDOOR BULK STORAGE AREA
- 500 GAL. USED OIL AST
- 10 – 55 GAL. MIS. PETROLEUM DRUMS
- 3 – 300 GAL. BULT OIL TANKS
- 275 GAL. BLUE DEF TANK

BORROW AREA

BORROW AREA

COMPOST AREA

WASTE CONTAINER STORAGE AREA

1000 GAL. USED OIL AST

TRUCK BAY WASH

CITIZEN DROP OFF

SCALES

SEDIMENTATION POND

OUTFALL #001

GP-1 GP-2R GP-3 GP-3R GP-5 GP-7 GP-9 GP-10 GP-11 GP-12 GP-13 GP-14 GP-15 GP-16 GP-17 GP-18 GP-19 GP-20 GP-22R GP-23 GP-24

MW2101R MW2102C MW2103R MW2104R MW2105C MW2106C MW2107D MW2108R MW2109C MW2110C MW2111 MW2112R

LEGEND:
- EXISTING 2' CONTOUR
- 660 EXISTING 10' CONTOUR
- EXISTING ROAD
- EXISTING BUILDING/OBJECT
- PL PROPERTY BOUNDARY
- PERMITTED WASTE BOUNDARY
- CONSTRUCTED WASTE BOUNDARY
- APPROXIMATE OUTFALL DRAINAGE AREA
- GROUNDWATER MONITORING WELL
- GAS PROBE
- STORMWATER POND
- EXISTING STORMWATER LETDOWN
- EXISTING STORMWATER TERRACE
- STORM WATER FLOW LINES
- BORROW AREA
- STORM WATER OUTFALL

NOTES:

1. EXISTING CONTOURS TAKEN FROM AN AERIAL SURVEY COMPLETED BY COOPER AERIAL SURVEY CO. ON DECEMBER 1, 2017.

N

APPROXIMATE GRAPHIC SCALE

350 0 175 350 700

1 inch = 350 ft.

PREPARED FOR:

COURTNEY RIDGE LANDFILL, LLC

SITE PLAN
NPDES PERMIT RENEWAL

COURTNEY RIDGE LANDFILL
2001 NORTH HWY 291
SUGAR CREEK, MO

Weaver Consultants Group
COLUMBIA, MISSOURI
(888) 660-0346 www.wcgrp.com

DRAWN BY:	DT
REVIEWED BY:	MAC
DATE:	3/23/2018
FILE:	0120-155-10
CAD:	Figure 2 - Site Layout.dwg

FIGURE 2

MDNR Form A: Application for Discharge Permit – Manufacturing, Commercial, Mining, Silviculture, Operations, Process and Storm Water (Outfalls #001 & #002)

AP29635

RECEIVED
MAR 28 2018
Operating Permit Section

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

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED

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

1. This application is for:

- ☐ An operating permit for a new or unpermitted facility:
  Please indicate the original Construction Permit # _____
- ☑ An operating permit renewal:
  Please indicate the permit # MO- 0117790 Expiration Date September 30, 2018
- ☐ An operating permit modification:
  Please indicate the permit # 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 / FAX	
Courtney Ridge Landfill			
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
2001 North M-291 Highway	Sugar Creek	MO	64058

3. OWNER

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE / FAX	
Courtney Ridge Landfill, LLC			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
2001 North M-291 Highway	Sugar Creek	MO	64058

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

4. CONTINUING AUTHORITY

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE / FAX	
Republic Services, Inc.		(573) 636-1144	(480) 718-4265
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
5605 Moreau River Access Road	Jefferson City	MO	65101

5. OPERATOR

NAME	CERTIFICATE NUMBER	TELEPHONE NUMBER WITH AREA CODE / FAX	
N/A			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE NUMBER WITH AREA CODE / FAX
Brad Zimmerman	Environmental Manager	(573) 636-1144
	E-MAIL ADDRESS: bzimmerman2@republicservices.co	(573) 635-6159

7. ADDITIONAL FACILITY INFORMATION

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

001 SW ¼ SE ¼ Sec 13 T 50N R 32W Jackson County
UTM Coordinates Easting (X): 380012 Northing (Y): 4333709
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 NW ¼ NW ¼ Sec 19 T 50N R 31W Jackson County
UTM Coordinates Easting (X): 380710 Northing (Y): 4333375

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

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

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

001 – SIC 4953 and NAICS _____ 002 – SIC 4953 and NAICS _____
003 – SIC _____ and NAICS _____ 004 – SIC _____ and NAICS _____

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

A.	Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? If yes, complete Form C or 2F. (2F is the U.S. EPA's Application for Storm Water Discharges Associate with Industrial Activity.)	YES ☑	NO ☐
B.	Is application for storm water discharges only? If yes, complete Form C or 2F.	YES ☑	NO ☐
C.	Is your facility considered a "Primary Industry" under EPA guidelines: If yes, complete Forms C or 2F and D.	YES ☐	NO ☑
D.	Is wastewater land applied? If yes, complete Form I.	YES ☐	NO ☑
E.	Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? If yes, complete Form R.	YES ☐	NO ☑

F. If you are a Class IA CAFO, please disregard part D and E of this section. However, please attach any revision to your Nutrient Management Plan.

F. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.

9. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

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

☐ - You have completed and submitted with this permit application the required documentation to participate in the eDMR system.

☑ - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.

☐ - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

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

NAME			
Eagle Materials, Inc. - Outfall #001 (Downstream Landowner for Outfall #002 attached)			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
2201 N. Courtney Road	Sugar Creek	MO	64058

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Brad Zimmerman, Environmental Manager	(573) 636-1144
SIGNATURE	**DATE SIGNED**
	3/28/2018

MO 780-1479 (09-16)

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

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

HAVE YOU INCLUDED:

- ☑ Appropriate Fees?
- ☑ Map at 1" = 2000' scale?
- ☑ Signature?
- ☑ Form C or 2F, if applicable?
- ☑ Form D, if applicable?
- ☑ Form I (Irrigation), if applicable?
- ☑ Form R (Sludge), if applicable?
- ☑ Revised Nutrient Management Plan, if applicable?

Form A – Application for Nondomestic Permit Under Missouri Clean Water Law

Section 10 – Downstream Landowners

Outfall #002

Vance Stevens
16539 E Courtney Atherton Rd.
Sugar Creek, MO 64058

MDNR Form C: Application for Discharge Permit – Primary Industries
(Outfalls #001 & #002)

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

Courtney Ridge Landfill

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

MO-0117790

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

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

A. FIRST 4953 B. SECOND 4212

C. THIRD _____ D. FOURTH _____

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

OUTFALL NUMBER (LIST) _____1/4 _____1/4 SEC_____ T_____ R_____ _____COUNTY

OUTFALL #001: SW 1/4, SE 1/4, SEC 13, T50N, R32W, JACKSON COUNTY
OUTFALL #002: NW 1/4, NW 1/4, SEC 19, T50N, R31W, JACSON COUNTY

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

OUTFALL NUMBER (LIST)	RECEIVING WATER
001, 002	Mill Creek (U), to Missouri River (P) (00356)

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

Municipal Solid Waste Landfill with collection and transportation of refuse, including a bulk storage area and fueling station.

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

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

1. OUTFALL NO.	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
(LIST)	A. OPERATION (LIST)	B. AVERAGE FLOW (INCLUDE UNITS) (MAXIMUM FLOW)	A. DESCRIPTION	B. LIST CODES FROM TABLE A
001	Stormwater Runoff	0.2443 MGD	Sedimentation	1 - U
		(9.40 MGD)		
002	Stormwater Runoff	0.3287 MGD	Sedimentation	1 - U
		(12.68 MGD)		
		*Average flow based on annual		
		rainfall for Indpendence, MO.		
		*Max flow based on 5 yr, 24 hr		
		storm event.		
		*All rainfall assumed to be		
		discharged as storm water for most		
		conservative approach.		

2.40 CONTINUED

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

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

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

2.50 MAXIMUM PRODUCTION

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

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

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

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

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

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

2.60 IMPROVEMENTS

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

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

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

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

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

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

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

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

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE

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)*
Pace Analytical Services, LLC	7901 W. Morris St. Indianapolis, IN 46231	(317) 243-8304	Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Hardness, Selenium, Sliver, Sodium, Zinc, Specific Conductance, Benzene, Ethylbenzene, Toluene, Xylene, Oil & Grease, TDS, TSS, Settleable Solids, pH, BOD, Chloride, Fluoride, Sulfate, Ammonia, COD, Hexavalent Chromium, Trivalent Chromium, Organic Carbon

3.30 CERTIFICATION

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Brad Zimmerman, Environmental Manager	(573) 636-1144
SIGNATURE (SEE INSTRUCTIONS)	**DATE SIGNED**
	3/28/2018

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. 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)	8.7	682.5					9	mg/L	lbs			
B. Chemical Oxygen Demand (COD)	41.1	3216.3					9	mg/L	lbs			
C. Total organic Carbon (TOC)	8.8	690.3					2	mg/L	lbs			
D. Total Suspended Solids (TSS)	28	2196.5					9	mg/L	lbs			
E. Ammonia *(as N)*	0.18	14.1					9	mg/L	lbs			
F. Flow	VALUE 9.4		VALUE		VALUE		1	MGD		VALUE		
G. Temperature *(winter)*	VALUE 5		VALUE		VALUE			°C		VALUE		
H. Temperature *(summer)*	VALUE 25		VALUE		VALUE			°C		VALUE		
I. pH	MINIMUM 7.5	MAXIMUM 8.2	MINIMUM	MAXIMUM				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		174	13650					9	mg/L	lbs			
C. Color		X												
D. Fecal Coliform		X												
E. Fluoride (16984-48-8)	X		0.38	29.8					5	mg/L	lbs			
F. Nitrate - Nitrate *(as N)*		X												

*Max Daily Value for Pollutant Concentration is highest concentration from previous 3 years (2015-2017) of sampling.
**Max Daily Flow is from 5 yr, 24 hr storm event with all rainwater considered as runoff.
***Max Daily Vale for Pollutant Mass is calculated from Max Daily Pollutant Concentration and Flow from 5 yr, 24 hr storm event.

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		6.4	502.1					5	mg/L	lbs			
I. Phosphorus *(as P)*, Total (7723-14-0)		X												
J. Sulfate *(as SO^4)* (14808-79-8)	X		363	28476					9	mg/L	lbs			
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		0.11	8.63					2	mg/L	lbs			
P. Boron, Total (7440-42-8)	X		0.98	76.9					4	mg/L	lbs			
Q. Cobalt, Total (7440-48-4)		X												
R. Iron, Total (7439-89-6)	X		2	156.9					9	mg/L	lbs			
S. Magnesium, Total (7439-95-4)	X		31.2	2448					6	mg/L	lbs			
T. Molybdenum, Total (7439-98-7)		X												
U. Manganese, Total (7439-96-5)	X		0.023	1.80					2	mg/L	lbs			
V. Tin, Total (7440-31-5)		X												
W. Titanium, Total (7440-32-6)		X												

*Max Daily Value for Pollutant Concentration is highest concentration from previous 3 years (2015-2017) of sampling.

**Max Daily Flow is from 5 yr, 24 hr storm event with all rainwater considered as runoff.

***Max Daily Vale for Pollutant Mass is calculated from Max Daily Pollutant Concentration and Flow from 5 yr, 24 hr storm event.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-9)		X												
2M. Arsenic, Total (7440-38-2)	X		0.0193	1.52					4	mg/L	lbs			
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		0.011	0.86					5	mg/L	lbs			
8M. Lead, Total (7439-92-1)		X												
9M. Mercury, Total (7439-97-6)		X												
10M. Nickel, Total (7440-02-0)	X		0.013	1.02					4	mg/L	lbs			
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												

*Max Daily Value for Pollutant Concentration is highest concentration from previous 3 years (2015-2017) of sampling.

**Max Daily Flow is from 5 yr, 24 hr storm event with all rainwater considered as runoff.

***Max Daily Vale for Pollutant Mass is calculated from Max Daily Pollutant Concentration and Flow from 5 yr, 24 hr storm event.

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)	< 2.0	< 211.6					2	mg/L	lbs			
B. Chemical Oxygen Demand (COD)	24.3	2571.4					2	mg/L	lbs			
C. Total organic Carbon (TOC)	5.7	603.2					1	mg/L	lbs			
D. Total Suspended Solids (TSS)	43.2	4571.4					2	mg/L	lbs			
E. Ammonia *(as N)*	0.89	94.2					2	mg/L	lbs			
F. Flow	VALUE 12.68		VALUE		VALUE		1	MGD		VALUE		
G. Temperature *(winter)*	VALUE 5		VALUE		VALUE			°C		VALUE		
H. Temperature *(summer)*	VALUE 25		VALUE		VALUE			°C		VALUE		
I. pH	MINIMUM 7.6	MAXIMUM 7.8	MINIMUM	MAXIMUM				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		44.1	4667					2	mg/L	lbs			
C. Color		X												
D. Fecal Coliform		X												
E. Fluoride (16984-48-8)	X		0.27	28.6					2	mg/L	lbs			
F. Nitrate - Nitrate *(as N)*	X		1.4	148.1					1	mg/L	lbs			

MO 780-1514 (06-13)

*Max Daily Value for Pollutant Concentration is highest concentration from previous 3 years (2015-2017) of sampling.
**Max Daily Flow is from 5 yr, 24 hr storm event with all rainwater considered as runoff.
***Max Daily Vale for Pollutant Mass is calculated from Max Daily Pollutant Concentration and Flow from 5 yr, 24 hr storm event.

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												
I. Phosphorus *(as P)*, Total (7723-14-0)		X												
J. Sulfate *(as SO^4)* (14808-79-8)	X		589	62328					2	mg/L	lbs			
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		0.457	48.4					1	mg/L	lbs			
Q. Cobalt, Total (7440-48-4)		X												
R. Iron, Total (7439-89-6)	X		0.437	46.2					2	mg/L	lbs			
S. Magnesium, Total (7439-95-4)	X		64.1	6793					1	mg/L	lbs			
T. Molybdenum, Total (7439-98-7)		X												
U. Manganese, Total (7439-96-5)	X		0.057	6.0					1	mg/L	lbs			
V. Tin, Total (7440-31-5)		X												
W. Titanium, Total (7440-32-6)		X												

*Max Daily Value for Pollutant Concentration is highest concentration from previous 3 years (2015-2017) of sampling.

**Max Daily Flow is from 5 yr, 24 hr storm event with all rainwater considered as runoff.

***Max Daily Vale for Pollutant Mass is calculated from Max Daily Pollutant Concentration and Flow from 5 yr, 24 hr storm event.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-9)		X												
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		0.012	1.27					2	mg/L	lbs			
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												

*Max Daily Value for Pollutant Concentration is highest concentration from previous 3 years (2015-2017) of sampling.

**Max Daily Flow is from 5 yr, 24 hr storm event with all rainwater considered as runoff.

***Max Daily Vale for Pollutant Mass is calculated from Max Daily Pollutant Concentration and Flow from 5 yr, 24 hr storm event.

4th Quarter 2017 Laboratory Report – Outfall #001

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

January 09, 2018

Glenn A. Swaggart
Magnolia Environmental Consultants
13997 W 146th St
Olathe, KS 66062

RE: Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Dear Glenn Swaggart:
Enclosed are the analytical results for sample(s) received by the laboratory on December 28, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angie Brown for
Colleen Clyne
colleen.clyne@pacelabs.com
1(913)563-1406
Project Manager

Enclosures

cc: Lab Data, Trihydro

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60261149001	STORMWATER OUTFALL 001	Water	12/28/17 10:30	12/28/17 11:50

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60261149001	STORMWATER OUTFALL 001	EPA 200.7	SMW, TDS	6	PASI-K
		EPA 624 Low	PGH	5	PASI-K
		EPA 1664A	LDF	1	PASI-K
		SM 2540C	HMM	1	PASI-K
		SM 2540D	LDB	1	PASI-K
		SM 2540F	HMM	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		SM 5210B	JSS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
		EPA 350.1	RAD	1	PASI-K
		EPA 410.4	LDB	1	PASI-K
		EPA 7196	LDB	1	PASI-K

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Republic_Magnolia Environmental Consultants
Date: January 09, 2018

General Information:
1 sample was analyzed for EPA 200.7. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Method: **EPA 624 Low**
Description: 624 Volatile Organics LowLevel
Client: Republic_Magnolia Environmental Consultants
Date: January 09, 2018

General Information:
1 sample was analyzed for EPA 624 Low. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 509249

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 2085724)
  - Benzene

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Method: **EPA 1664A**
Description: HEM, Oil and Grease
Client: Republic_Magnolia Environmental Consultants
Date: January 09, 2018

General Information:
1 sample was analyzed for EPA 1664A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: Republic_Magnolia Environmental Consultants
Date: January 09, 2018

General Information:
1 sample was analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Method: **SM 2540D**
Description: 2540D Total Suspended Solids
Client: Republic_Magnolia Environmental Consultants
Date: January 09, 2018

General Information:
1 sample was analyzed for SM 2540D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 509294

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.
- DUP (Lab ID: 2085900)
  - Total Suspended Solids

Additional Comments:

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PROJECT NARRATIVE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Method: **SM 2540F**
Description: 2540F Total Settleable Solids
Client: Republic_Magnolia Environmental Consultants
Date: January 09, 2018

General Information:
1 sample was analyzed for SM 2540F. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Republic_Magnolia Environmental Consultants
Date: January 09, 2018

General Information:
1 sample was analyzed for SM 4500-H+B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- STORMWATER OUTFALL 001 (Lab ID: 60261149001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Method: **SM 5210B**
Description: 5210B BOD, 5 day
Client: Republic_Magnolia Environmental Consultants
Date: January 09, 2018

General Information:
1 sample was analyzed for SM 5210B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with SM 5210B with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Batch Comments:

BOD nutrient blank depletion exceeded 0.2 mg/L DO
- QC Batch: 509430

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PROJECT NARRATIVE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Republic_Magnolia Environmental Consultants
Date: January 09, 2018

General Information:
1 sample was analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Method: **EPA 350.1**
Description: 350.1 Ammonia
Client: Republic_Magnolia Environmental Consultants
Date: January 09, 2018

General Information:
1 sample was analyzed for EPA 350.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Method: **EPA 410.4**
Description: 410.4 COD
Client: Republic_Magnolia Environmental Consultants
Date: January 09, 2018

General Information:
1 sample was analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Method: **EPA 7196**
Description: 7196 Chromium, Hexavalent Diss
Client: Republic_Magnolia Environmental Consultants
Date: January 09, 2018

General Information:
1 sample was analyzed for EPA 7196. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Sample: STORMWATER OUTFALL 001 **Lab ID: 60261149001** Collected: 12/28/17 10:30 Received: 12/28/17 11:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Beryllium, Total Recoverable	ND	ug/L	1.0	1	12/29/17 13:06	01/05/18 13:04	7440-41-7	
Cadmium, Total Recoverable	ND	ug/L	5.0	1	12/29/17 13:06	01/05/18 13:04	7440-43-9	
Copper, Total Recoverable	ND	ug/L	10.0	1	12/29/17 13:06	01/05/18 13:04	7440-50-8	
Iron, Total Recoverable	**978**	ug/L	50.0	1	12/29/17 13:06	01/05/18 13:04	7439-89-6	
Selenium, Total Recoverable	ND	ug/L	15.0	1	12/29/17 13:06	01/05/18 14:53	7782-49-2	
Silver, Total Recoverable	ND	ug/L	7.0	1	12/29/17 13:06	01/05/18 13:04	7440-22-4	
624 Volatile Organics LowLevel	Analytical Method: EPA 624 Low							
Benzene	ND	ug/L	1.0	1		12/30/17 09:10	71-43-2	L1
Surrogates								
4-Bromofluorobenzene (S)	97	%	80-120	1		12/30/17 09:10	460-00-4	
Toluene-d8 (S)	97	%	80-120	1		12/30/17 09:10	2037-26-5	
1,2-Dichloroethane-d4 (S)	91	%	80-120	1		12/30/17 09:10	17060-07-0	
Preservation pH	**1.0**		1.0	1		12/30/17 09:10		
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	ND	mg/L	5.0	1		01/03/18 16:32		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**409**	mg/L	5.0	1		12/29/17 11:42		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	**28.0**	mg/L	5.0	1		12/30/17 09:20		
2540F Total Settleable Solids	Analytical Method: SM 2540F							
Total Settleable Solids	ND	mL/L/hr	0.20	1		12/28/17 14:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**7.5**	Std. Units	0.10	1		01/02/18 11:37		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	**8.7**	mg/L	2.0	1	12/28/17 16:00	01/02/18 10:53		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**35.2**	mg/L	5.0	5		01/06/18 16:19	16887-00-6	
Fluoride	**0.34**	mg/L	0.20	1		01/05/18 17:15	16984-48-8	
Sulfate	**183**	mg/L	20.0	20		01/06/18 16:33	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	ND	mg/L	0.10	1		12/29/17 12:49	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	**41.1**	mg/L	10.0	1		01/04/18 13:32		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Sample: STORMWATER OUTFALL 001 **Lab ID: 60261149001** Collected: 12/28/17 10:30 Received: 12/28/17 11:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7196 Chromium, Hexavalent Diss	Analytical Method: EPA 7196							
Chromium, Hexavalent,Dissolved	ND	mg/L	0.010	1		12/28/17 17:34	18540-29-9	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

QC Batch: 509139
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60261149001

METHOD BLANK: 2085352 Matrix: Water
Associated Lab Samples: 60261149001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Beryllium	ug/L	ND	1.0	01/05/18 12:31	
Cadmium	ug/L	ND	5.0	01/05/18 12:31	
Copper	ug/L	ND	10.0	01/05/18 12:31	
Iron	ug/L	ND	50.0	01/05/18 12:31	
Selenium	ug/L	ND	15.0	01/05/18 14:32	
Silver	ug/L	ND	7.0	01/05/18 12:31	

LABORATORY CONTROL SAMPLE: 2085353

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Beryllium	ug/L	1000	928	93	85-115	
Cadmium	ug/L	1000	905	90	85-115	
Copper	ug/L	1000	894	89	85-115	
Iron	ug/L	10000	9490	95	85-115	
Selenium	ug/L	1000	1050	105	85-115	
Silver	ug/L	500	473	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2085354 2085355

Parameter	Units	60261034001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	ug/L	ND	1000	1000	999	975	100	98	70-130	2	20	
Cadmium	ug/L	ND	1000	1000	936	955	94	96	70-130	2	20	
Copper	ug/L	13.6	1000	1000	979	943	97	93	70-130	4	20	
Iron	ug/L	1010	10000	10000	11100	10800	101	98	70-130	2	20	
Selenium	ug/L	ND	1000	1000	1070	1070	107	106	70-130	0	20	
Silver	ug/L	ND	500	500	511	492	102	98	70-130	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

QC Batch: 509249
QC Batch Method: EPA 624 Low
Analysis Method: EPA 624 Low
Analysis Description: 624 MSV Low Level
Associated Lab Samples: 60261149001

METHOD BLANK: 2085723 Matrix: Water
Associated Lab Samples: 60261149001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/30/17 08:00	
1,2-Dichloroethane-d4 (S)	%	89	80-120	12/30/17 08:00	
4-Bromofluorobenzene (S)	%	96	80-120	12/30/17 08:00	
Toluene-d8 (S)	%	98	80-120	12/30/17 08:00	

LABORATORY CONTROL SAMPLE: 2085724

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	22.7	113	81-111	L1
1,2-Dichloroethane-d4 (S)	%			89	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			96	80-120	

MATRIX SPIKE SAMPLE: 2085725

Parameter	Units	60261209001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	ND	20	19.2	93	37-151	
1,2-Dichloroethane-d4 (S)	%				90	80-120	
4-Bromofluorobenzene (S)	%				98	80-120	
Toluene-d8 (S)	%				97	80-120	
Preservation pH		1.0		1.0			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

QC Batch: 509561
QC Batch Method: EPA 1664A
Analysis Method: EPA 1664A
Analysis Description: 1664 HEM, Oil and Grease
Associated Lab Samples: 60261149001

METHOD BLANK: 2086724 Matrix: Water
Associated Lab Samples: 60261149001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	01/03/18 16:22	

LABORATORY CONTROL SAMPLE: 2086725

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.9	102	78-114	

MATRIX SPIKE SAMPLE: 2086726

Parameter	Units	60260972001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	<5.0	39.2	36.5	86	78-114	

SAMPLE DUPLICATE: 2086727

Parameter	Units	60261117001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	<5.0	ND		18	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

QC Batch: 509254
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60261149001

METHOD BLANK: 2085731 Matrix: Water
Associated Lab Samples: 60261149001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	12/29/17 11:38	

LABORATORY CONTROL SAMPLE: 2085732

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1080	108	80-120	

SAMPLE DUPLICATE: 2085733

Parameter	Units	60261149001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	409	437	7	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

QC Batch: 509294
QC Batch Method: SM 2540D
Analysis Method: SM 2540D
Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 60261149001

METHOD BLANK: 2085898 Matrix: Water
Associated Lab Samples: 60261149001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/30/17 09:17	

SAMPLE DUPLICATE: 2085899

Parameter	Units	60261178001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	41.1	41.1	0	10	

SAMPLE DUPLICATE: 2085900

Parameter	Units	60261194001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	1640	1070	42	10	D6

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QUALITY CONTROL DATA

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

QC Batch: 509386
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60261149001

SAMPLE DUPLICATE: 2086215

Parameter	Units	60261077001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	4.8	4.9	0	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

QC Batch: 509053
QC Batch Method: SM 5210B
Analysis Method: SM 5210B
Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 60261149001

METHOD BLANK: 2085168 Matrix: Water
Associated Lab Samples: 60261149001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	01/02/18 10:00	

LABORATORY CONTROL SAMPLE: 2085169

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	180	91	85-115	

SAMPLE DUPLICATE: 2085170

Parameter	Units	60261125001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	284	289	2	17	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

QC Batch: 509677
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60261149001

METHOD BLANK: 2087317 Matrix: Water
Associated Lab Samples: 60261149001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.20	01/05/18 14:28	

LABORATORY CONTROL SAMPLE: 2087318

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.6	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2087319 2087320

Parameter	Units	60260367001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	2.8	2.8	112	112	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

QC Batch: 509781
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60261149001

METHOD BLANK: 2087796 Matrix: Water
Associated Lab Samples: 60261149001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	01/06/18 09:50	
Sulfate	mg/L	ND	1.0	01/06/18 09:50	

LABORATORY CONTROL SAMPLE: 2087797

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.2	104	90-110	
Sulfate	mg/L	5	5.5	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2087798 2087799

Parameter	Units	60261197002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2150	10000	10000	12400	12400	102	102	80-120	0	15	
Sulfate	mg/L	22400	10000	10000	33800	34100	114	117	80-120	1	15	

MATRIX SPIKE SAMPLE: 2087800

Parameter	Units	60260936001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	81.7	50	140	117	80-120	
Sulfate	mg/L	239	100	357	118	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

QC Batch: 509151
QC Batch Method: EPA 350.1
Analysis Method: EPA 350.1
Analysis Description: 350.1 Ammonia
Associated Lab Samples: 60261149001

METHOD BLANK: 2085465 Matrix: Water
Associated Lab Samples: 60261149001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/29/17 12:23	

LABORATORY CONTROL SAMPLE: 2085466

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	4.9	99	90-110	

MATRIX SPIKE SAMPLE: 2085467

Parameter	Units	60260518001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1.5	5	6.3	98	90-110	

MATRIX SPIKE SAMPLE: 2085469

Parameter	Units	60261043001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	5	5.1	101	90-110	

SAMPLE DUPLICATE: 2085468

Parameter	Units	60261124001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	73.6	68.6	7	18	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

QC Batch: 509473
QC Batch Method: EPA 410.4
Analysis Method: EPA 410.4
Analysis Description: 410.4 COD
Associated Lab Samples: 60261149001

METHOD BLANK: 2086468 Matrix: Water
Associated Lab Samples: 60261149001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	01/04/18 13:26	

LABORATORY CONTROL SAMPLE: 2086469

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	47.4	95	90-110	

MATRIX SPIKE SAMPLE: 2086470

Parameter	Units	60260748002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	54.0	102	90-110	

SAMPLE DUPLICATE: 2086471

Parameter	Units	60260748004 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	71.6	71.2	1	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

QC Batch: 509146
QC Batch Method: EPA 7196
Analysis Method: EPA 7196
Analysis Description: 7196 Chromium, Hexavalent Diss
Associated Lab Samples: 60261149001

METHOD BLANK: 2085385 Matrix: Water
Associated Lab Samples: 60261149001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent,Dissolved	mg/L	ND	0.010	12/28/17 17:33	

LABORATORY CONTROL SAMPLE: 2085386

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent,Dissolved	mg/L	.1	0.099	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2085387 2085388

Parameter	Units	60261149001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent,Dissolved	mg/L	ND	.1	.1	0.10	0.10	102	102	85-115	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 509430

[1] BOD nutrient blank depletion exceeded 0.2 mg/L DO

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

H6 Analysis initiated outside of the 15 minute EPA required holding time.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: COURTNEY RIDGE OUTFALL 001
Pace Project No.: 60261149

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60261149001	STORMWATER OUTFALL 001	EPA 200.7	509139	EPA 200.7	509348
60261149001	STORMWATER OUTFALL 001	EPA 624 Low	509249		
60261149001	STORMWATER OUTFALL 001	EPA 1664A	509561		
60261149001	STORMWATER OUTFALL 001	SM 2540C	509254		
60261149001	STORMWATER OUTFALL 001	SM 2540D	509294		
60261149001	STORMWATER OUTFALL 001	SM 2540F	509087		
60261149001	STORMWATER OUTFALL 001	SM 4500-H+B	509386		
60261149001	STORMWATER OUTFALL 001	SM 5210B	509053	SM 5210B	509430
60261149001	STORMWATER OUTFALL 001	EPA 300.0	509677		
60261149001	STORMWATER OUTFALL 001	EPA 300.0	509781		
60261149001	STORMWATER OUTFALL 001	EPA 350.1	509151		
60261149001	STORMWATER OUTFALL 001	EPA 410.4	509473		
60261149001	STORMWATER OUTFALL 001	EPA 7196	509146		

Pace Analytical
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Sample Condition Upon Receipt

WO# : 60261149

60261149

Client Name: Republic_Magnolia Env.

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☑ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☐ No ☑ Seals intact: Yes ☐ No ☑

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: CF 0.0 / CF +0.2 T-266 / T-239 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 1.0 **Corr. Factor** CF 0.0 / CF +0.2 **Corrected** 1.0

Date and initials of person examining contents: JB 12/28

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	BOD 35 Cr4
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	
Cyanide water sample checks: ☑ N/A		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☑No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: ELW 12/28/17 Date: _____

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A Required Client Information:

Company: Republic_Magnolia Environmental
Address: 13997 W 146th St
Olathe, KS 66062
Email To: gswaggart@magnolia-env.com
Phone: 913-904-4525 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Glenn Swaggart
Copy To:
Purchase Order No.:
Project Name: Courtney Ridge Outfall 001
Project Number:

Section C Invoice Information:

Attention: Accounts Payable
Company Name: Republic
Address:
Pace Quote Reference:
Pace Project Manager: alice.spiller@pacelabs.com
Pace Profile #: 8401, line 1

REGULATORY AGENCY

☑ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: MO

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	300.0 Chloride, Sulfate, Fluoride	Ammonia	BOD, COD, pH	1664 Oil & Grease	Set Solids	200.7 Metals*	624 Benzene	Total Dissolved Solids	Total Suspended Solids	7196 Diss Hexavlent Chromium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	(2)AGH Stormwater Outfall 001 (3)BAG BP3N	WT	G			12/28	10:56	1↓	4	1	1	5						x	x	x	x	x	x	x	x	x	x	N	60261149 BP3S** BP3N** (5)DGAH (6)
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*200.7 Metals: Be,Cd,Cu,Fe,Se,Ag	Andrew Baker	12/28	11:50		12/28	1150	1.0	Y	N	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Andrew Baker
SIGNATURE of SAMPLER:
DATE Signed (MM/DD/YY): 12/29/17

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

2nd Quarter 2017 Laboratory Report – Outfall #002

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

May 12, 2017

Glenn A. Swaggart
Magnolia Environmental Consultants
13997 W 146th St
Olathe, KS 66062

RE: Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Dear Glenn Swaggart:
Enclosed are the analytical results for sample(s) received by the laboratory on May 03, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Spiller

Alice Spiller
alice.spiller@pacelabs.com
(913)563-1409
Project Manager

Enclosures

cc: Diane Foster, Foster Environmental Services

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

Pace Analytical Services, LLC
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(913)599-5665

SAMPLE SUMMARY

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60243341001	STORMWATER OUTFALL 002 QUARTER	Water	05/03/17 09:50	05/03/17 11:09
60243341002	TRIP BLANK	Water	05/03/17 09:50	05/03/17 11:09

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SAMPLE ANALYTE COUNT

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60243341001	**STORMWATER OUTFALL 002 QUARTER**	EPA 200.7	TDS	12	PASI-K
		EPA 624 Low	EAG	7	PASI-K
		EPA 1664A	AGO	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		SM 2540D	LDF	1	PASI-K
		SM 2540F	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		SM 5210B	HMM	1	PASI-K
		EPA 300.0	RAD	3	PASI-K
		EPA 350.1	CRS	1	PASI-K
		EPA 410.4	JSS	1	PASI-K

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PROJECT NARRATIVE

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Republic_Magnolia Environmental Consultants
Date: May 12, 2017

General Information:
1 sample was analyzed for EPA 200.7. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Method: **EPA 624 Low**
Description: 624 Volatile Organics LowLevel
Client: Republic_Magnolia Environmental Consultants
Date: May 12, 2017

General Information:
1 sample was analyzed for EPA 624 Low. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
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(913)599-5665

PROJECT NARRATIVE

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Method: **EPA 1664A**
Description: HEM, Oil and Grease
Client: Republic_Magnolia Environmental Consultants
Date: May 12, 2017

General Information:
1 sample was analyzed for EPA 1664A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
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(913)599-5665

PROJECT NARRATIVE

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: Republic_Magnolia Environmental Consultants
Date: May 12, 2017

General Information:
1 sample was analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Method: **SM 2540D**
Description: 2540D Total Suspended Solids
Client: Republic_Magnolia Environmental Consultants
Date: May 12, 2017

General Information:
1 sample was analyzed for SM 2540D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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(913)599-5665

PROJECT NARRATIVE

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Method: **SM 2540F**
Description: 2540F Total Settleable Solids
Client: Republic_Magnolia Environmental Consultants
Date: May 12, 2017

General Information:
1 sample was analyzed for SM 2540F. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Republic_Magnolia Environmental Consultants
Date: May 12, 2017

General Information:
1 sample was analyzed for SM 4500-H+B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- STORMWATER OUTFALL 002 QUARTER (Lab ID: 60243341001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Method: **SM 5210B**
Description: 5210B BOD, 5 day
Client: Republic_Magnolia Environmental Consultants
Date: May 12, 2017

General Information:
1 sample was analyzed for SM 5210B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with SM 5210B with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 475352

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- LCS (Lab ID: 1946653)
  - BOD, 5 day

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 475352

B2: Oxygen usage is less than 2.0 for all dilutions set. The reported value is an estimated less than value and is calculated for the dilution using the most amount of sample.

- DUP (Lab ID: 1946654)
  - BOD, 5 day

B3: The dissolved oxygen depletion of the dilution water blank exceeded 0.2 mg/L.

- BLANK (Lab ID: 1946652)
  - BOD, 5 day
- DUP (Lab ID: 1946654)
  - BOD, 5 day
- STORMWATER OUTFALL 002 QUARTER (Lab ID: 60243341001)
  - BOD, 5 day

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PROJECT NARRATIVE

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Republic_Magnolia Environmental Consultants
Date: May 12, 2017

General Information:
1 sample was analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Method: **EPA 350.1**
Description: 350.1 Ammonia
Client: Republic_Magnolia Environmental Consultants
Date: May 12, 2017

General Information:
1 sample was analyzed for EPA 350.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Method: **EPA 410.4**
Description: 410.4 COD
Client: Republic_Magnolia Environmental Consultants
Date: May 12, 2017

General Information:
1 sample was analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Sample: STORMWATER OUTFALL 002 QUARTER **Lab ID: 60243341001** Collected: 05/03/17 09:50 Received: 05/03/17 11:09 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Arsenic, Total Recoverable	ND	ug/L	10.0	1	05/08/17 11:20	05/11/17 13:37	7440-38-2	
Beryllium, Total Recoverable	ND	ug/L	1.0	1	05/08/17 11:20	05/11/17 13:37	7440-41-7	
Boron, Total Recoverable	**457**	ug/L	100	1	05/08/17 11:20	05/11/17 13:37	7440-42-8	
Cadmium, Total Recoverable	ND	ug/L	5.0	1	05/08/17 11:20	05/11/17 13:37	7440-43-9	
Chromium, Total Recoverable	ND	ug/L	5.0	1	05/08/17 11:20	05/11/17 13:37	7440-47-3	
Copper, Total Recoverable	ND	ug/L	10.0	1	05/08/17 11:20	05/11/17 13:37	7440-50-8	
Iron, Total Recoverable	**437**	ug/L	50.0	1	05/08/17 11:20	05/11/17 13:37	7439-89-6	
Lead, Total Recoverable	ND	ug/L	5.0	1	05/08/17 11:20	05/11/17 13:37	7439-92-1	
Nickel, Total Recoverable	**7.1**	ug/L	5.0	1	05/08/17 11:20	05/11/17 13:37	7440-02-0	
Selenium, Total Recoverable	ND	ug/L	15.0	1	05/08/17 11:20	05/11/17 13:37	7782-49-2	
Silver, Total Recoverable	ND	ug/L	7.0	1	05/08/17 11:20	05/11/17 13:37	7440-22-4	
Zinc, Total Recoverable	ND	ug/L	50.0	1	05/08/17 11:20	05/11/17 13:37	7440-66-6	
624 Volatile Organics LowLevel	Analytical Method: EPA 624 Low							
Benzene	ND	ug/L	1.0	1		05/08/17 13:29	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		05/08/17 13:29	100-41-4	
Toluene	ND	ug/L	1.0	1		05/08/17 13:29	108-88-3	
Surrogates								
4-Bromofluorobenzene (S)	99	%	80-120	1		05/08/17 13:29	460-00-4	
Toluene-d8 (S)	99	%	80-120	1		05/08/17 13:29	2037-26-5	
1,2-Dichloroethane-d4 (S)	97	%	80-120	1		05/08/17 13:29	17060-07-0	
Preservation pH	**1.0**		1.0	1		05/08/17 13:29		
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	ND	mg/L	5.0	1		05/10/17 10:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**739**	mg/L	5.0	1		05/04/17 12:19		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	**43.2**	mg/L	5.0	1		05/04/17 09:12		
2540F Total Settleable Solids	Analytical Method: SM 2540F							
Total Settleable Solids	ND	mL/L/hr	0.20	1		05/03/17 14:29		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		05/10/17 00:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	ND	mg/L	2.0	1	05/04/17 12:15	05/09/17 10:34		B3,L2
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**21.9**	mg/L	5.0	5		05/04/17 14:45	16887-00-6	
Fluoride	**0.27**	mg/L	0.20	1		05/04/17 14:30	16984-48-8	
Sulfate	**408**	mg/L	25.0	25		05/05/17 11:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Sample: STORMWATER OUTFALL 002 QUARTER **Lab ID: 60243341001** Collected: 05/03/17 09:50 Received: 05/03/17 11:09 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	ND	mg/L	0.10	1		05/04/17 11:30	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	**20.9**	mg/L	10.0	1		05/05/17 09:29		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

QC Batch: 475770
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60243341001

METHOD BLANK: 1948719
Matrix: Water
Associated Lab Samples: 60243341001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	10.0	05/11/17 13:32	
Beryllium	ug/L	ND	1.0	05/11/17 13:32	
Boron	ug/L	ND	100	05/11/17 13:32	
Cadmium	ug/L	ND	5.0	05/11/17 13:32	
Chromium	ug/L	ND	5.0	05/11/17 13:32	
Copper	ug/L	ND	10.0	05/11/17 13:32	
Iron	ug/L	ND	50.0	05/11/17 13:32	
Lead	ug/L	ND	5.0	05/11/17 13:32	
Nickel	ug/L	ND	5.0	05/11/17 13:32	
Selenium	ug/L	ND	15.0	05/11/17 13:32	
Silver	ug/L	ND	7.0	05/11/17 13:32	
Zinc	ug/L	ND	50.0	05/11/17 13:32	

LABORATORY CONTROL SAMPLE: 1948720

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1000	1000	100	85-115	
Beryllium	ug/L	1000	1090	109	85-115	
Boron	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1060	106	85-115	
Chromium	ug/L	1000	1090	109	85-115	
Copper	ug/L	1000	1060	106	85-115	
Iron	ug/L	10000	10700	107	85-115	
Lead	ug/L	1000	1070	107	85-115	
Nickel	ug/L	1000	1070	107	85-115	
Selenium	ug/L	1000	1060	106	85-115	
Silver	ug/L	500	535	107	85-115	
Zinc	ug/L	1000	1120	112	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1948721 1948722

Parameter	Units	60243413001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	24.1	1000	1000	1070	1070	104	104	70-130	0	20	
Beryllium	ug/L	ND	1000	1000	1080	1090	108	109	70-130	1	20	
Boron	ug/L	2910	1000	1000	3930	3920	102	101	70-130	0	20	
Cadmium	ug/L	ND	1000	1000	1070	1060	107	106	70-130	1	20	
Chromium	ug/L	ND	1000	1000	1070	1080	107	108	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1948721 1948722

Parameter	Units	60243413001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	12.3	1000	1000	1080	1070	106	106	70-130	0	20	
Iron	ug/L	91.1	10000	10000	10500	10600	104	105	70-130	1	20	
Lead	ug/L	ND	1000	1000	1000	1000	100	100	70-130	0	20	
Nickel	ug/L	65.3	1000	1000	1080	1070	101	100	70-130	1	20	
Selenium	ug/L	ND	1000	1000	1070	1050	107	105	70-130	1	20	
Silver	ug/L	ND	500	500	543	544	109	109	70-130	0	20	
Zinc	ug/L	ND	1000	1000	1130	1130	110	109	70-130	0	20	

MATRIX SPIKE SAMPLE: 1948723

Parameter	Units	60243485001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	ND	1000	1040	104	70-130	
Beryllium	ug/L	ND	1000	1100	110	70-130	
Boron	ug/L	0.13 mg/L	1000	1170	104	70-130	
Cadmium	ug/L	ND	1000	1070	107	70-130	
Chromium	ug/L	ND	1000	1090	109	70-130	
Copper	ug/L	0.012 mg/L	1000	1090	108	70-130	
Iron	ug/L	0.44 mg/L	10000	11200	107	70-130	
Lead	ug/L	ND	1000	1050	105	70-130	
Nickel	ug/L	ND	1000	1060	105	70-130	
Selenium	ug/L	ND	1000	1040	104	70-130	
Silver	ug/L	ND	500	535	107	70-130	
Zinc	ug/L	0.052 mg/L	1000	1160	111	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

QC Batch: 475505
QC Batch Method: EPA 624 Low
Analysis Method: EPA 624 Low
Analysis Description: 624 MSV Low Level
Associated Lab Samples: 60243341001

METHOD BLANK: 1947248
Matrix: Water
Associated Lab Samples: 60243341001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	05/08/17 09:58	
Ethylbenzene	ug/L	ND	1.0	05/08/17 09:58	
Toluene	ug/L	ND	1.0	05/08/17 09:58	
1,2-Dichloroethane-d4 (S)	%	92	80-120	05/08/17 09:58	
4-Bromofluorobenzene (S)	%	105	80-120	05/08/17 09:58	
Toluene-d8 (S)	%	96	80-120	05/08/17 09:58	

LABORATORY CONTROL SAMPLE: 1947249

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.9	94	81-111	
Ethylbenzene	ug/L	20	18.7	93	80-111	
Toluene	ug/L	20	18.8	94	78-110	
1,2-Dichloroethane-d4 (S)	%			100	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			98	80-120	

MATRIX SPIKE SAMPLE: 1947250

Parameter	Units	60243050002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	0.015 mg/L	20	34.9	97	37-151	
Ethylbenzene	ug/L	0.0053 mg/L	20	27.1	109	64-127	
Toluene	ug/L	0.00039J mg/L	20	20.8	102	47-150	
1,2-Dichloroethane-d4 (S)	%				93	80-120	
4-Bromofluorobenzene (S)	%				87	80-120	
Toluene-d8 (S)	%				103	80-120	
Preservation pH		1.0		1.0			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

QC Batch: 476163
QC Batch Method: EPA 1664A
Analysis Method: EPA 1664A
Analysis Description: 1664 HEM, Oil and Grease
Associated Lab Samples: 60243341001

METHOD BLANK: 1949750 Matrix: Water
Associated Lab Samples: 60243341001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	05/10/17 09:53	

LABORATORY CONTROL SAMPLE: 1949751

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	35.3	88	78-114	

MATRIX SPIKE SAMPLE: 1949752

Parameter	Units	60243032001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	39.2	41.2	103	78-114	

SAMPLE DUPLICATE: 1949753

Parameter	Units	60243430001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	1.7J		18	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

QC Batch: 475411
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60243341001

METHOD BLANK: 1946859
Matrix: Water
Associated Lab Samples: 60243341001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	05/04/17 12:07	

LABORATORY CONTROL SAMPLE: 1946860

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	978	98	80-120	

SAMPLE DUPLICATE: 1946861

Parameter	Units	60243380002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	491	492	0	10	

SAMPLE DUPLICATE: 1946862

Parameter	Units	60243380015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	457	458	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

QC Batch: 475373
QC Batch Method: SM 2540D
Analysis Method: SM 2540D
Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 60243341001

METHOD BLANK: 1946724
Matrix: Water
Associated Lab Samples: 60243341001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	05/04/17 09:04	

SAMPLE DUPLICATE: 1946725

Parameter	Units	60243328001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	141	142	1	10	

SAMPLE DUPLICATE: 1946726

Parameter	Units	60243321007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		10	

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QUALITY CONTROL DATA

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

QC Batch: 476160
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60243341001

SAMPLE DUPLICATE: 1949745

Parameter	Units	60243448001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.3	8.3	0	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

QC Batch: 475352
QC Batch Method: SM 5210B
Analysis Method: SM 5210B
Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 60243341001

METHOD BLANK: 1946652 Matrix: Water
Associated Lab Samples: 60243341001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	05/09/17 09:53	B3

LABORATORY CONTROL SAMPLE: 1946653

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	160	81	85-115	L2

SAMPLE DUPLICATE: 1946654

Parameter	Units	60243287002 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	ND	3.6		17	B2,B3

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

QC Batch: 475365
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60243341001

METHOD BLANK: 1946698 Matrix: Water
Associated Lab Samples: 60243341001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	05/04/17 08:24	
Fluoride	mg/L	ND	0.20	05/04/17 08:24	

LABORATORY CONTROL SAMPLE: 1946699

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1946700 1946701

Parameter	Units	60243237001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	16.9	10	10	27.9	27.9	111	111	80-120	0	15	
Fluoride	mg/L	0.38	2.5	2.5	3.1	3.2	110	112	80-120	1	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

QC Batch: 475563
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60243341001

METHOD BLANK: 1947541 Matrix: Water
Associated Lab Samples: 60243341001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	05/05/17 08:35	

LABORATORY CONTROL SAMPLE: 1947542

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1947543 1947544

Parameter	Units	60243444001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	8.8	5	5	14.0	14.0	105	106	80-120	0	15	

MATRIX SPIKE SAMPLE: 1947545

Parameter	Units	60243535002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	17100	25000	41700	98	80-120	

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REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

QC Batch: 475376
QC Batch Method: EPA 350.1
Analysis Method: EPA 350.1
Analysis Description: 350.1 Ammonia
Associated Lab Samples: 60243341001

METHOD BLANK: 1946737
Matrix: Water
Associated Lab Samples: 60243341001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	05/04/17 11:15	

LABORATORY CONTROL SAMPLE: 1946738

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.2	105	90-110	

MATRIX SPIKE SAMPLE: 1946739

Parameter	Units	60243313001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.65	5	5.2	91	90-110	

MATRIX SPIKE SAMPLE: 1946846

Parameter	Units	60243354001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.14	5	4.8	93	90-110	

SAMPLE DUPLICATE: 1946740

Parameter	Units	60243187001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	0.37	0.38	3	18	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
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QUALITY CONTROL DATA

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

QC Batch: 475347
QC Batch Method: EPA 410.4
Analysis Method: EPA 410.4
Analysis Description: 410.4 COD
Associated Lab Samples: 60243341001

METHOD BLANK: 1946629 Matrix: Water
Associated Lab Samples: 60243341001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	05/05/17 09:14	

LABORATORY CONTROL SAMPLE: 1946630

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	49.9	100	90-110	

MATRIX SPIKE SAMPLE: 1946631

Parameter	Units	60243228001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	35.5	50	82.4	94	90-110	

MATRIX SPIKE SAMPLE: 1946633

Parameter	Units	60243341001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	20.9	50	70.3	99	90-110	

SAMPLE DUPLICATE: 1946632

Parameter	Units	60243229001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	26.1	30.6	16	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALIFIERS

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

B2	Oxygen usage is less than 2.0 for all dilutions set. The reported value is an estimated less than value and is calculated for the dilution using the most amount of sample.
B3	The dissolved oxygen depletion of the dilution water blank exceeded 0.2 mg/L.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: STORMWATER OUTFALL 002 COURTNE
Pace Project No.: 60243341

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60243341001	STORMWATER OUTFALL 002 QUARTER	EPA 200.7	475770	EPA 200.7	475920
60243341001	STORMWATER OUTFALL 002 QUARTER	EPA 624 Low	475505		
60243341001	STORMWATER OUTFALL 002 QUARTER	EPA 1664A	476163		
60243341001	STORMWATER OUTFALL 002 QUARTER	SM 2540C	475411		
60243341001	STORMWATER OUTFALL 002 QUARTER	SM 2540D	475373		
60243341001	STORMWATER OUTFALL 002 QUARTER	SM 2540F	475287		
60243341001	STORMWATER OUTFALL 002 QUARTER	SM 4500-H+B	476160		
60243341001	STORMWATER OUTFALL 002 QUARTER	SM 5210B	475352	SM 5210B	476599
60243341001	STORMWATER OUTFALL 002 QUARTER	EPA 300.0	475365		
60243341001	STORMWATER OUTFALL 002 QUARTER	EPA 300.0	475563		
60243341001	STORMWATER OUTFALL 002 QUARTER	EPA 350.1	475376		
60243341001	STORMWATER OUTFALL 002 QUARTER	EPA 410.4	475347		

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Sample Condition Upon Receipt

WO# : 60243341

60243341

Client Name: Republic_Magnolia

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☒ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☐ No ☒ Seals intact: Yes ☐ No ☒

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

Thermometer Used: CF +2.9 T-266 / CF +0.3 T-239 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 12.6 **Corr. Factor** CF +2.5 / CF +0.7 **Corrected** 12.8

Date and initials of person examining contents: 05/5/17

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	BOD pH Sett Solids
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☒Yes ☐No ☐N/A	
Cyanide water sample checks: ☒ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐Yes ☐No	
Trip Blank present:	☒Yes ☐No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☒No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Alice Date: 05/03/17

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Republic_Magnolia Environmental	Report To:	Glenn Swaggart	Attention:	Accounts Payable
Address:	13997 W 146th St	Copy To:		Company Name:	Republic
	Olathe, KS 66062			Address:	
Email To:	gswaggart@magnolia-env.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	913-904-4525 Fax:	Project Name:	Stormwater Outfall 002 Courtney	Pace Project Manager:	alice.spiller@pacelabs.com
Requested Due Date/TAT:		Project Number:		Pace Profile #:	8401, line 5

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: MO

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: 300.0 Chloride, Sulfate, Fluoride	Ammonia	BOD, COD, pH	1664 Oil & Grease	Set Solids	200.7*	Total Dissolved Solids	Total Suspended Solids	624 BTE			Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	(2)ACH Stormwater Outfall 002 Quarterly		WT	G	3/3	0900				10	3	1	1	5						x	x	x	x	x	x	x	x	(3)BP1U		N	60243341 BP3S BP3N (2)H69A 001 (2)DAH 002
2																																
3																																
4																																
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ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*200.7 Metals: As,B,Be,Cd,Cr,Cu,Fe,Pb,Ni,Se,Ag,Zn	Andrew Baker	05/03/17			5/3/17	1109	12.8	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Andrew Baker

SIGNATURE of SAMPLER: Andrew Baker

DATE Signed (MM/DD/YY): 05/03/17

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.